AEGIS ENVIRONMENTAL, INC.

LETTER OF TRANSMITTAL

Check Return Address Block:

☒ 1050 Melody Lane, Suite 160, Roseville, CA 95678

☐ 8196 S W Hall Blvd, Suite 300, Beaverton, OR 97005

☐ 2470 Wrondel Way, Suite 208, Reno, NV 89502

Date: 3-8-93 Project # 90007

Subject/Title: Request For SCE Closure E C Ruehrwein Site, 1061 East Shore Highway Albany, CA

TO: Alameda County Health

ATTENTION: Ms Juliet Shin

80 Swan Way, Room 200

Oakland, CA. 94621

We Are Sending: ☒ Enclosed ☐ Under Separate Cover Via _____

The Following:

☐ Draft Report / Letter ☐ Regulatory Correspondance ☐ Figures/Maps/Tables

☐ Final Report / Letter ☐ Laboratory Analytical Results ☐ Statement of Qualifications

☐ Cost Estimate ☐ Contract ☐ _____

These Are Transmitted As Checked Below:

☐ For Approval ☐ For Review And Comment ☐ For Your Information

☐ As Requested ☐ Per Our Telephone Conversation ☐ As Executed

☐ For Your Use ☐ Approved As Submitted ☐ _____

Copies Were Sent To: ☐ None ☐ The Following:

1) Hal Hamre - E.C. Ruehrwein

2) _____

3) _____

4) _____

5) _____

This Document Was Sent Via:

☐ First Class Mail ☐ Federal Express/ Priority Overnight ☐ Certified/Return Receipt

☐ Federal Express/ Standard Overnight ☐ Express Mail ☐ Registered Mail

☐ Federal Express/ 2nd Day Delivery ☐ Airborne Express ☐ Priority Mail

Comments: _____

Signed: _____

{1} Original, {2} Central File (Correspondence), {3} Project Manager

AEGIS ENVIRONMENTAL, INC.

1050 Melody Lane, Suite 160, Roseville, CA 95678 ✦ 916 • 782-2110 / 916 • 969-2110 / FAX 916 • 786-7830

March 8, 1993

Ms. Juliet Shin
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Subject: **Request For Site Closure**
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway, Berkeley, California

Dear Ms. Shin:

Aegis Environmental, Inc. (Aegis), is pleased to submit the attached document as our request for site closure. Its submittal is in response to your agency's letter, dated October 23, 1992, and is based upon existing on-site conditions as related to the former underground storage tanks at the site. This request is also submitted as a formal recommendation for termination of all environmental work at the site by its owner.

If a response is not received from the Alameda County Department of Environmental Health (ACDEH) within 30 days of this date, Aegis will assume the ACDEH agrees with our findings and has proceeded with site closure.

Sincerely,

Thomas J. Knoch
Project Engineer

TJK/law

Attachment

90-0070D.LTR

AEGIS ENVIRONMENTAL, INC.

1050 Melody Lane, Suite 160, Roseville, CA 95678 ✦ 916 • 782-2110 / 916 • 969-2110 / FAX 916 • 786-7830

March 5, 1993

Ms. Juliet Shin
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Subject: **Request For Site Closure**
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway, Albany, California

Dear Ms. Shin:

Aegis Environmental, Inc. (Aegis), on behalf of E. C. Buehrer Associates, Inc. (E. C. Buehrer), hereby requests closure for the subject site (Figure 1). Included here, is a response to a letter from the Alameda County Department of Environmental Health (ACDEH) to E. C. Buehrer, dated October 23, 1992.

This request is based on facts, discussed below, strictly related to the site's former underground storage tanks (UST) and the environmental assessments completed there to date. Aegis believes closure should be granted based on these facts alone; unencumbered by concerns either beyond the control of or unrelated to E. C. Buehrer, particularly those that may relate to an electrical transformer formerly located on neighboring Southern Pacific Railroad (SPRR) property.

The facts to be considered include: a) the site's history; and b) the results of the assessments completed on site (Figures 2 and 3). Included with this request are four reports and one proposal documenting the history of the site and results of the series of assessments conducted between February 1988 and June 1992: 1) "Tank Removal" report by Ivan Vegvary of Lafayette, California, dated March 24, 1988 (Attachment 1); 2) "Proposal for Subsurface Investigation" by Hageman-Schank, Inc. (HSI), of San Ramon, California, dated November 16, 1989 (Attachment 2); 3) "Hydrogeological Investigation Results Report" by Aegis, dated June 12, 1990 (Attachment 3); 4) "Problem Assessment Report" (PAR) by Aegis, dated August 1, 1991 (Attachment 4); and 5) "Soil Investigation Results Report" by Aegis, dated July 1, 1992 (Attachment 5). Reference will be made to these documents during the following discussion.

SITE HISTORY

The site is located in an industrial area at 1061 Eastshore Highway in Berkeley, California. (Figure 1). The site has been occupied by the current owner for a number of years. In addition to maintaining a warehouse and providing parts for material handling equipment (such as forklifts), the site also supports several mechanical repair shops.

The site is bordered on the east by an open area that was the former location of an Alcan Aluminum metals plant. This property is now owned by SPRR. To the north is an irrigation and plumbing supply business. To the south is a diesel engine service and repair shop. Each of these and the E. C. Buehrer site are situated on imported bay-fill material.

ENVIRONMENTAL ASSESSMENTS COMPLETED TO DATE

In December 1987, a 300-gallon UST containing waste-oil reportedly failed a precision tank test. On February 18, 1988, the single-wall, steel waste-oil tank and a 1000-gallon, single-wall, steel gasoline UST were excavated and removed from the southwest portion of the site. The work was document by Ivan Vegvary in the March 24, 1988, report. Water grab samples were collected in lieu of soil samples due to the very shallow groundwater beneath the site. Laboratory analysis of a water sample indicated the presence of (nonpolar) oil & grease (O & G) compounds. The sample collected from the waste-oil tank excavation contained O & G at 17.0 parts-per-million (ppm). The analysis also indicated benzene at 0.10 ppm and low levels of halogenated volatile organic compounds. Total petroleum hydrocarbons (TPH), as gasoline, and benzene were indicated in the sample collected from the gasoline UST excavation at 2.0 and 0.18 ppm, respectively.

Subsequently, the ACDEH requested submittal of a workplan to address assessment of the groundwater. The workplan was outlined by HSI in the November 16, 1989, proposal. Three groundwater monitoring wells were proposed for installation and sampling. However, the wells were not installed until after Aegis was assigned the project in early 1990. The HSI scope of work was modified to include a fourth well. In April 1990, Aegis supervised the drilling and installation of wells MW-1, MW-2, MW-3, and MW-4 at the locations indicated on Figure 2. Soil samples collected from these borings indicated concentrations of O & G ranging from 450 to 6,400 ppm. Concentrations of TPH, as diesel, ranged from 1.9 to 900 ppm. The borings for wells MW-1, MW-3, and MW-4 indicated TPH, as gasoline and motor oil, ranging from 1.0 to 130 ppm and 160 to 1,700 ppm, respectively. The results of the investigation were documented by Aegis in the June 12, 1990, report.

In April 1991, Aegis supervised the drilling of nine soil borings on site. Four of the borings were completed as groundwater monitoring wells MW-5 through MW-8. Following installation, the four new wells were sampled with the pre-existing wells in May 1991.

Soil samples collected from the borings indicated concentrations of O & G and TPH, as motor oil. The highest concentration of TPH, as motor oil, was detected at 280 ppm, and O & G was detected at 2,400 ppm. However, TPH, as gasoline, was detected at 3.0 ppm in only one sample. TPH, as mineral spirits and diesel, and chlorinated hydrocarbons were below method detection limits.

Water samples collected from the new wells indicated concentrations of TPH, as diesel, up to 230 parts-per-billion (ppb) and benzene, toluene, ethylbenzene, and total xylenes up to 1.8 ppb. The results of the April 1991 investigation were documented, along with a discussion of the assessments to that point, by Aegis in the August 1, 1991, PAR.

From late April to early May 1992 a tank removal program was executed. This program involved removal of a second 1,000-gallon single-wall, steel gasoline UST from the site (Figure 2). In addition, remediation of the soils, identified by the previous investigations as containing residual petroleum hydrocarbons, was effected through excavation and removal from the site. During the excavation, wells MW-1 through MW-4 were abandoned and MW-8 was damaged. Well MW-8 was subsequently removed and its hole abandoned.

Seventeen confirmation soil samples were collected from the sidewalls of the excavation (Figure 3). These samples were collected at a depth of approximately 3 feet below grade and at the soil-groundwater interface. These sidewall soil samples were analyzed for total O & G. The analytical results indicated concentrations of total O & G ranging from less than 50 to 3,000 ppm.

Following backfilling of the excavation, two groundwater monitoring wells were installed within the backfill material; a replacement for MW-8, near the southwest corner of the excavation, and new well MW-9. The tank removal, excavation, and well installations were documented by Aegis in the July 1, 1992, report. Aegis began a program of quarterly monitoring of the wells in June 1992. The last monitoring was conducted on December 30, 1992, as documented by Aegis within a report dated January 29, 1993.

SOIL REMEDIATION

During soil remediation, between approximately 1,000 to 1,200 cubic yards of soil were excavated from the site. The lateral and vertical limits of the excavation were dictated by the very shallow depth to groundwater (i.e., approximately 4 to 5 feet below surface) and the physical constraints of the site, including property lines, existing structures, and other improvements.

AROCLOR COMPOUNDS

As indicated in Aegis' June 12, 1990, report, Aroclor was detected in shallow soil samples collected near the east side of the site (Figure 3). The samples were collected at about 2 feet below surface from two borings. The samples contained concentrations of 300 ppb (Aroclor 1254) and 60 ppb (Aroclor 1260). The borings were drilled very near the former location of an electrical transformer that was situated on the now SPRR property; near the eastern property line of the E. C. Buehrer site (Figure 2).

The Aroclor compounds, including 1254 and 1260, are listed in the Merck Index (eleventh edition; 1989), as belonging the family of polychlorinated biphenyls (PCB), typically used as insulators in electrical transformers. Neither PCB nor electrical transformers were ever used on the E. C. Buehrer site.

RESPONSE TO ACDEH LETTER

In the letter, dated October 23, 1992, the ACDEH states the soil samples that indicated the PCB were "collected from near the former **on-site** transformer in May 1990" (emphasis added). Aegis wishes to point out the transformer was never, at any time, located on the subject site.

Aegis concurs with the ACDEH's statement the PCB concentration(s) were low. Partly for that reason, but also because of the apparent source of the PCB, Aegis cannot recommend to E. C. Buehrer that excavation and resampling be undertaken to assess the extent of these compounds. Neither can Aegis recommend a risk assessment be undertaken in lieu of additional PCB assessment. Aegis views the responsibility for either approach to be squarely on the shoulders of either or both Alcan Aluminum and SPRR, the former and current owners of the adjacent parcel. Aegis is not aware of any details as to the ownership of the former transformer.

Aegis views the matter of site closure to rest specifically on the issues surrounding the occurrence of fuel- and waste-oil-related petroleum hydrocarbons as discussed above. Remediation of soils containing these hydrocarbons was completed, with the full concurrence of the ACDEH, to the fullest extent possible from both a practical and feasible point of view. We note with interest, the October 23, 1992, letter does not address this point.

We look forward to receiving your favorable response to this request as soon as possible.

We appreciate the interest of the Alameda County Department of Environmental Health in this matter, and trust this letter meets your needs. If you have any questions or comments, please do not hesitate to call us at (916)782-2110.

Sincerely,

AEGIS ENVIRONMENTAL, INC.

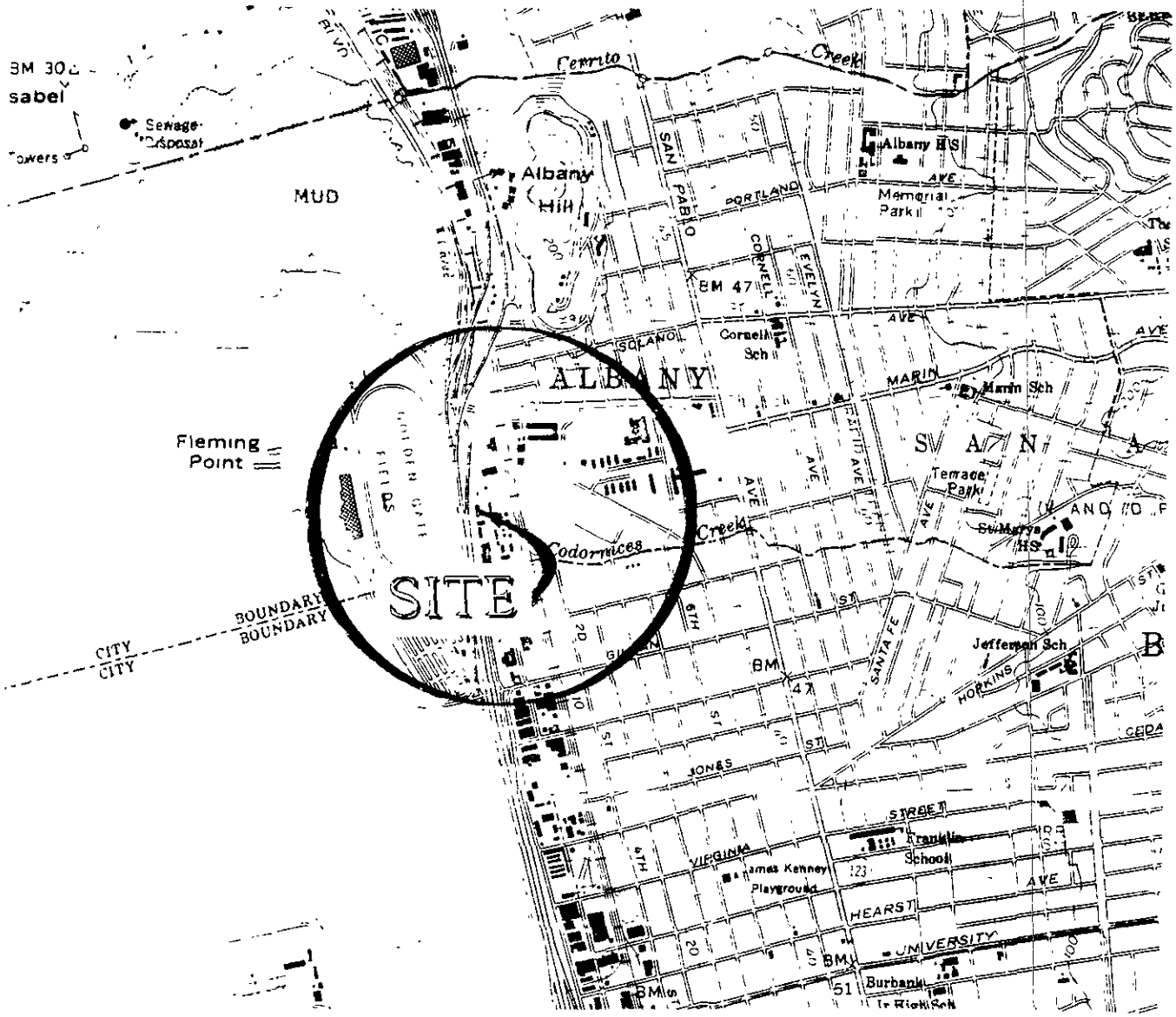
Thomas J. Knoch
Project Engineer

Douglas I. Sheeks
Senior Geologist
CRG No. 5211

TJK/DIS/law

cc: C. Johnson, E. C. Buehrer, Inc.

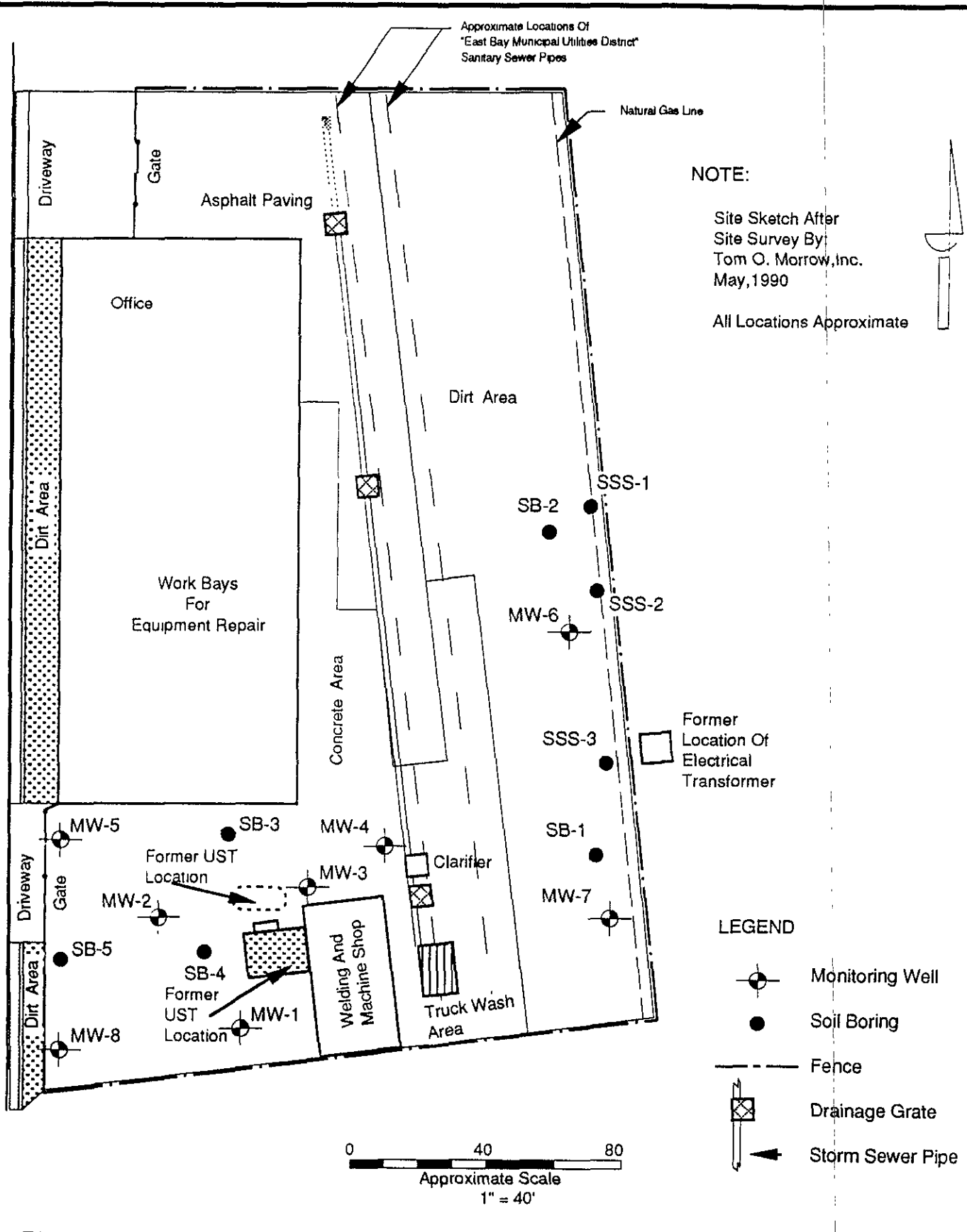
FIGURES



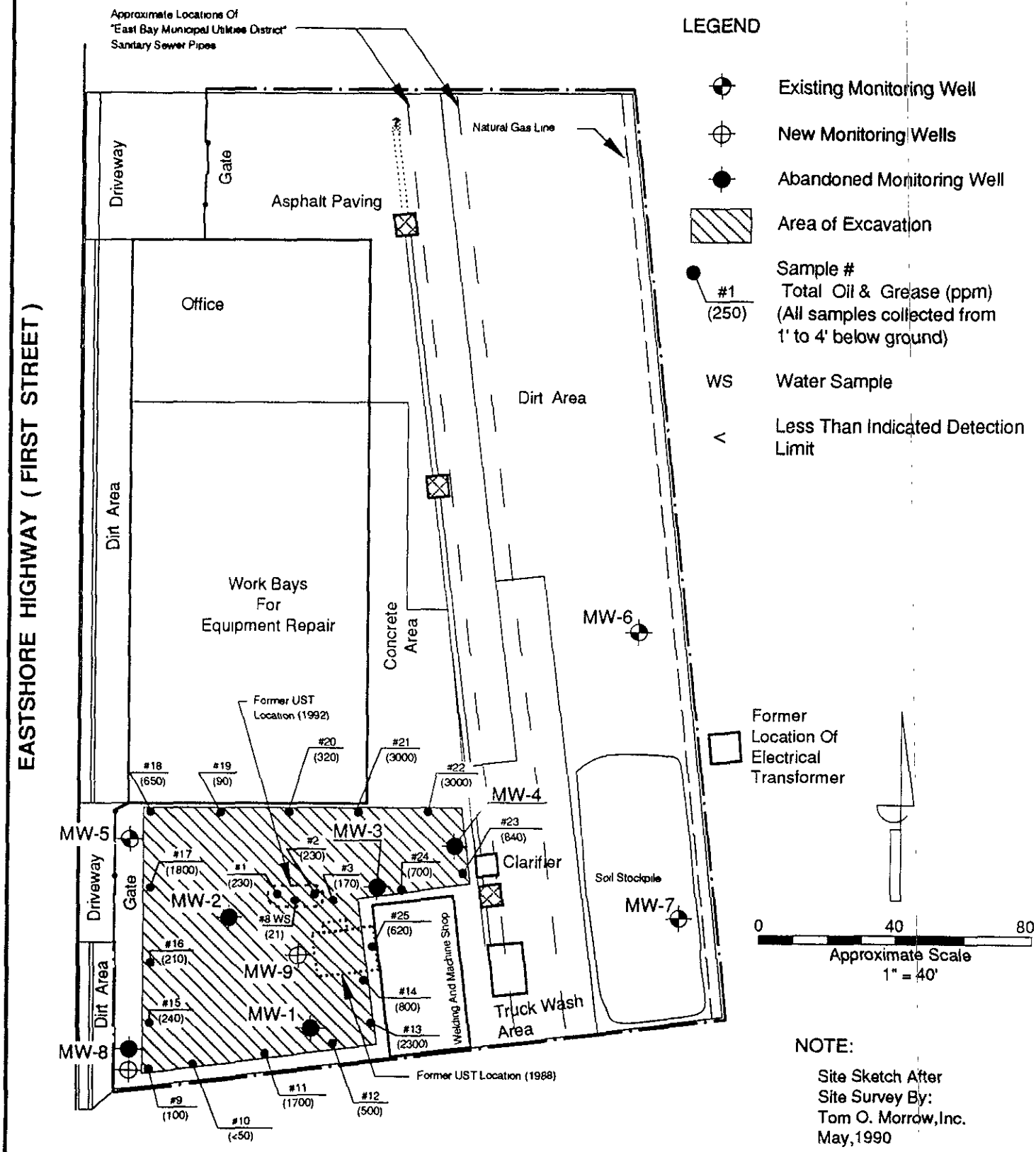
GENERAL NOTES:

BASE MAP FROM USGS
7.5 MINUTE TOPOGRAPHIC
RICHMOND & OAKLAND WEST, CALIF.

AEGIS ENVIRONMENTAL, INC.		SITE LOCATION MAP	FIGURE 1
DRAWN BY: Ed Bernard	DATE: May 15, 1992	E.C. Buehrer Associates, Inc. 1061 Eastshore Highway Albany, CA	PROJECT NUMBER 10-90007
REVIEWED BY:	DATE:		



AEGIS ENVIRONMENTAL, INC.		SITE MAP	FIGURE 2
DRAWN BY: Ed Bernard	DATE: April 8, 1991	E.C. Buehrer Associates, Inc. 1061 Eastshore Highway Albany, CA	
REVISED BY: D. Hada	DATE: February 12, 1993		PROJECT NUMBER: 90-007
REVIEWED BY:	DATE:		



NOTE:

Site Sketch After
Site Survey By:
Tom O. Morrow,Inc.
May,1990

All Locations Approximate

AEGIS ENVIRONMENTAL, INC.		SITE MAP WITH EXCAVATION AND SOIL SAMPLE LOCATIONS	FIGURE 3
DRAWN BY: Ed Bernard	DATE: May 15, 1992	E.C. Buehrer Associates, Inc. 1061 Eastshore Highway Albany, CA	PROJECT NUMBER 10-90007
REVISED BY: D. Hada	DATE: June 11, 1992		
REVIEWED BY:	DATE		

ATTACHMENT 1

TANK REMOVAL REPORT
March 24, 1988

IVAN VEGVARY, P.E., L.S.

Municipal Engineering • Environmental Cleanup

40 Terra Teresa
Lafayette, California 94549
(415) 947-1051

March 24, 1988

re: Tank removal, Buerher, Inc., Material Handling Equipment
1061 Eastshore Highway, Berkeley, CA 94710
(Our job number 88006)

Willis Brothers Excavating
321 1st Avenue, South
Pacheco, CA 94553

Dear Mr. Willis,

Attached are the following reports relative to the contamination monitoring of the above mentioned tank removals.

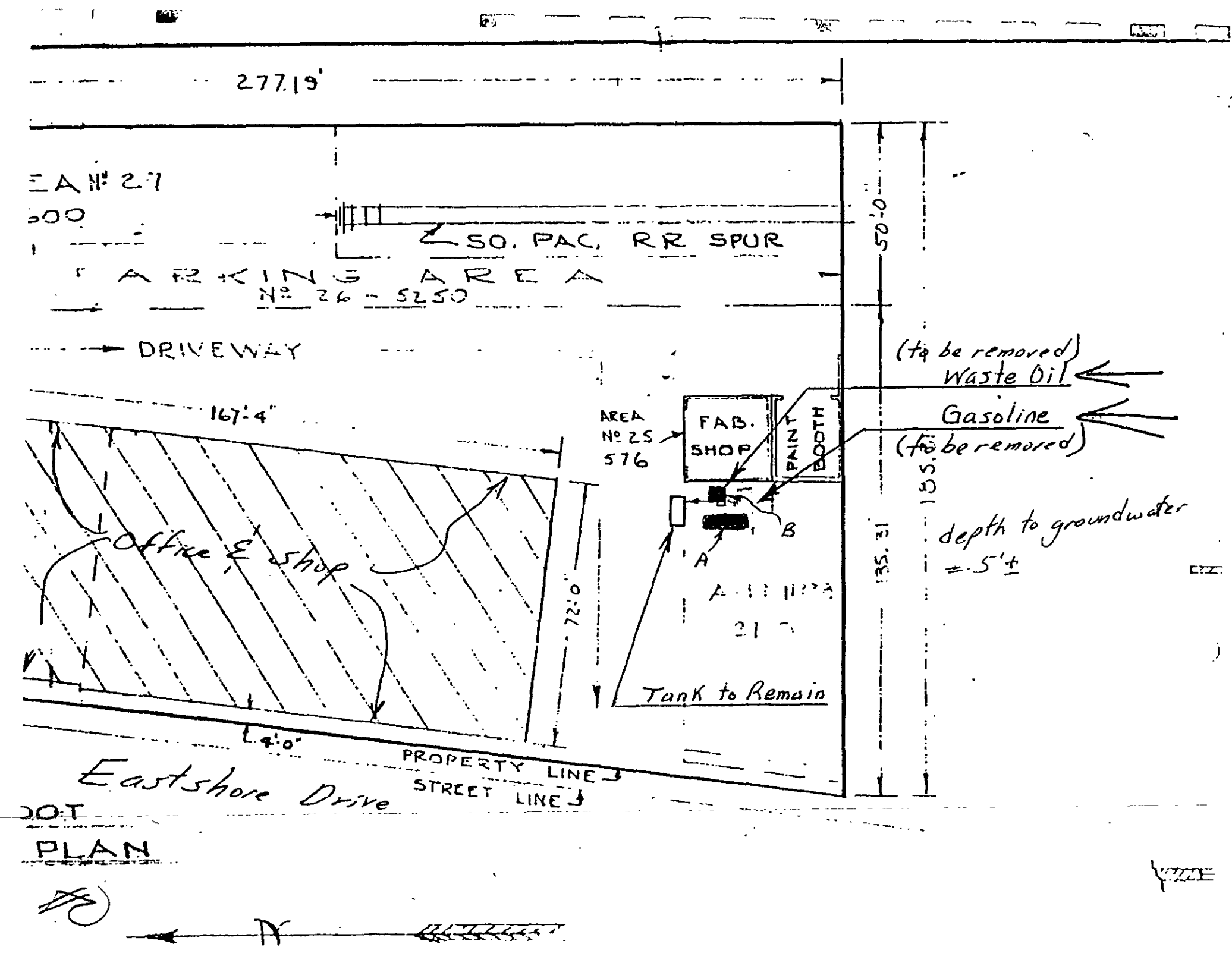
1. Plot plan of sampling locations
2. Summary table of analytical results
3. Laboratory raw data
4. Chain of Custody Record
5. My billing for the above services.

If we can be of further service, or if you have any questions, please don't hesitate to call me.

Respectfully submitted,

Ivan Vegvary

Civil Engineer
R.C.E. 18546


277.19'
EA № 27
500
SO. PAC. RR SPUR
PARKING AREA
№ 26 - 5250
DRIVEWAY
167'-4"
AREA
№ 25
576
FAB. SHOP
PAINT BOOTH
50'-0"
135.31'
(to be removed)
Waste Oil
Gasoline
(to be removed)
depth to groundwater
= 5'±
B
A
Office & Shop
72'-0"
Tank to Remain
4'-0"
PROPERTY LINE
STREET LINE
Eastshore Drive
PLAN

IVAN VEGVARY, P.E., L.S.

Municipal Engineering • Environmental Cleanup

40 Terra Teresa
Lafayette, California 94549
(415) 947-1051

SUMMARY OF LABORATORY REPORT

BEUHRER MATERIAL HANDLING

OUR TEST NUMBER	TEST ON PLAT	TOTAL PETROLEUM HYDROCARBONS GASOLINE	KEROSINE	DIESEL	OIL & GREASE
A	A	(2,000 ug/l EPA 8015, Modified)			
		EPA Method 8020, Modified			
		Benzene	180 ug/l		
		Toluene	23 ug/l		
		xylenes	279 ug/l		
B	B				17,000ug/kg

WOT

PPB

Pollution conditions indicated by tests (2 parts per million and 17 parts per million) are acceptable and the host materials can stay in place.

EPA Method 8020 detected the following, all in ug/l:

Benzene 100
Toluene 9.9
Xylenes 240

EPA Method 8010 detected the following, all in ug/l:

1,1-Dichloroethane 18
Dichloromethane 10
1,1,2,2-Tetrachloroethane 3.4
Dichloromethane 10
trans-1,2-Dichloroethylene 6.5
1,1,1-Trichloroethane 28

10

DATE: [illegible]/88
LOG NO.: [illegible]6
DATE SAMPLED: 2/18/88
DATE RECEIVED: 2/18/88
PAGE: Four

Sample Type: Water

A, 1' Under Tank (Gas Tank)

Method and Constituent	Units	Concentration	Detection Limit
Modified EPA Method 8015:			
Volatile Hydrocarbons	ug/l	2,000	20
Modified EPA Method 8020:			
Benzene	ug/l	180	7
Toluene	ug/l	23	10
Xylenes	ug/l	270	20

Hugh R. McLean
Supervisory Chemist

HRM:mln

Analytical Laboratory, Inc.
3423 Investment Boulevard, #8 • ard, California 94545 (415) 783-6960

TAL

DATE: 3/14/88
LOG NO.: 5686
DATE SAMPLED: 2/18/88
DATE RECEIVED: 2/18/88

CUSTOMER: Ivan Vegvary

PROJECT: No. 88006, 1061 Eastshore-Albany

Sample Type: Water

B, 1' Under Tank (Waste Oil Tank)

Method and Constituent	Units	Concentration	Detection Limit
Standard Method 503E, Hydrocarbons:			
Oil and Grease	ug/l	17,000	1,000
EPA Method 8020:			
Benzene	ug/l	100	3
Chlorobenzene	ug/l	< 5	5
1,2-Dichlorobenzene	ug/l	< 9	9
1,3-Dichlorobenzene	ug/l	< 7	7
1,4-Dichlorobenzene	ug/l	< 7	7
Ethyl benzene	ug/l	< 6	6
Toluene	ug/l	9.9	5
Xylenes	ug/l	240	9

DATE: 2/24/88
LOG NO.: 3
DATE SAMPLED: 2/18/88
DATE RECEIVED: 2/18/88
PAGE: Three

Sample Type: Water

B, 1' Under Tank (Waste Oil Tank)

Method and Constituent	Units	Concentration	Detection Limit
EPA Method 8010 (Continued):			
1,1-Dichloroethylene	ug/l	< 0.5	0.5
trans-1,2-Dichloroethylene	ug/l	6.5	0.5
Dichloromethane	ug/l	10	0.5
1,2-Dichloropropane	ug/l	< 0.5	0.5
1,3-Dichloropropylene	ug/l	< 0.5	0.5
1,1,2,2-Tetrachloroethane	ug/l	3.4	0.5
1,1,1,2-Tetrachloroethane	ug/l	< 0.5	0.5
Tetrachloroethylene	ug/l	< 0.5	0.5
1,1,1-Trichloroethane	ug/l	28	0.5
1,1,2-Trichloroethane	ug/l	< 0.5	0.5
Trichloroethylene	ug/l	< 0.5	0.5
Trichlorofluoromethane	ug/l	< 0.5	0.5
Trichloropropane	ug/l	< 0.5	0.5
Vinyl chloride	ug/l	< 0.5	0.5

DATE: 3/14/88
LOG NO.:
DATE SAMPLED: -/18/88
DATE RECEIVED: 2/18/88
PAGE: Two

Sample Type: Water

B, 1' Under Tank (Waste Oil Tank)

Method and Constituent	Units	Concentration	Detection Limit
EPA Method 8010:			
Benzyl chloride	ug/l	< 0.5	0.5
Bis (2-chloroethoxy) methane	ug/l	< 0.5	0.5
Bis (2-chloroisopropyl) ether	ug/l	< 0.5	0.5
Bromobenzene	ug/l	< 0.5	0.5
Bromodichloromethane	ug/l	< 0.5	0.5
Bromoform	ug/l	< 0.5	0.5
Bromomethane	ug/l	< 0.5	0.5
Carbon tetrachloride	ug/l	< 0.5	0.5
Chloracetaldehyde	ug/l	< 0.5	0.5
Chloral	ug/l	< 0.5	0.5
Chlorobenzene	ug/l	< 0.5	0.5
Chloroethane	ug/l	< 0.5	0.5
Chloroform	ug/l	< 0.5	0.5
1-Chlorohexane	ug/l	< 0.5	0.5
2-Chloroethyl vinyl ether	ug/l	< 0.5	0.5
Chloromethane	ug/l	< 0.5	0.5
Chloromethyl methyl ether	ug/l	< 0.5	0.5
Chlorotoluene	ug/l	< 0.5	0.5
Dibromochloromethane	ug/l	< 0.5	0.5
Dibromomethane	ug/l	< 0.5	0.5
1,2-Dichlorobenzene	ug/l	< 0.5	0.5
1,3-Dichlorobenzene	ug/l	< 0.5	0.5
1,4-Dichlorobenzene	ug/l	< 0.5	0.5
Dichlorodifluoromethane	ug/l	< 0.5	0.5
1,1-Dichloroethane	ug/l	18	0.5
1,2-Dichloroethane	ug/l	< 0.5	0.5

3145 Investment Boulevard, #8, • Ha[illegible]ard, California 94545

(415) 783-69

TAL

DATE March 14, 1988

INVOICE

5888

REQUESTOR

SOLD TO Ivan Vegvary
40 Terra Teresa
Lafayette, CA 94549

OUR LOG NO.		YOUR P.O.NO.	PROJECT	CODE
5686			No. 88006, 1061 Eastshore-Albany	T/k

QUANTITY	SAMPLE TYPE	DESCRIPTION	TURNAROUND TIME	UNIT PRICE	AMOUNT
1	Water	TVH/BTX analysis	10 day	85.00	$ 85.00
1	Water	8010, 8020, O & G 503E analysis	10 day	270.00	270.00
		TOTAL			$355.00

TERMS NET 30 DAYS

CHAIN OF CUSTODY RECORD

PROJ. NO. [illegible] | SITE NAME & ADDRESS: 1001 Eastshore – Albany

SAMPLERS: (Signature)

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	TYPE OF CONTAINER (1)	Analyses Requested (2): Total Petroleum HC	Aromatic HC (BTX)	VOC – EPA 8240	Oil & Grease	Tetraethyl Lead	REMARKS
B	2/13/92	11:35		X	1' Under Tank	[illegible]	X	X				
B3	"	"		X	" " "	"			X	X		

(1) Brass tubes (soil), or VOA vial water, per RWQCB Guidelines.

(2) Per RWQCB Guidelines

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Receive by: (Signature)
[signature]	2/14/92 4:55				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by. (Signature)	Date / Time	Received for Laboratory by: (Signature) [signature]	Date / Time 2/13/92 5:00 pm	Remarks	

ATTACHMENT 2

PROPOSAL FOR SUBSURFACE INVESTIGATION
November 16, 1989

.IAGEMAN-SCHANK, IN .
2723 Crow Canyon Rd., Suite 210
San Ramon, CA 94583
(415) 837-2926

November 16, 1989

PROPOSAL
FOR
SUBSURFACE INVESTIGATION

BUERHER, INC. insd
1061 EASTSHORE HIGHWAY, BERKELEY, CA

I. INTRODUCTION

The proposed scope of work involves the installation of three groundwater monitoring wells as the result of subsurface contamination found at the time two (2) underground storage tanks were removed from this site.

However, four wells placed drained.

The site location is 1061 Eastshore Highway, Berkeley, CA, and has been occupied by the current owners for a number of years. In addition to maintaining a warehouse and providing parts for material handling equipment (such as forklifts), mechanical repair shops are present on-site. In conjunction with the equipment repairing, the site has historically operated three underground storage tanks.

On February 18, 1988, a 300 gallon underground waste oil tank and a 1,000 gallon underground gasoline tank were removed. The tank removals were conducted by Willis Brothers Excavating, Pacheco, CA, and Ivan Vegvary, P.E., Lafayette, CA. It is assumed that the tank removal and/or closure was done under permit from the Alameda County Environmental Health Department. A copy

#10

of the sampling report for the previous tank removals is included as Attachment A. More detailed information regarding the tank removals will be collected and will be included in the report that is to be submitted to the Alameda County Health Department following the collection of the information proposed and approved in this workplan.

II. SITE DESCRIPTION

Vicinity Description and Hydrogeologic Setting

The location of the site is shown on the vicinity map (Figure 1). The soils beneath the site consist of Quaternary Alluvium overlying Franciscan sandstone and siltstone bedrock (Geologic Map of California, San Francisco Sheet, State of California Division of Mines and Geology, 1980). Bedrock is likely to occur at a depth of twenty or more feet beneath the site. During the borings for the well installations, varying amounts of clay, sand, gravel, and non-native fill can be expected to be encountered.

Based upon the surface topography, as well as the various hydrologic features shown on the vicinity map, the general regional shallow groundwater can be expected to flow from the Berkeley Hills and San Pablo Ridge (area of groundwater recharge) and move westward toward Cordonices Creek and San Francisco Bay (area of discharge). Although the placement of the proposed monitoring wells are based upon this assumption of groundwater flow direction, water level data from the three wells will determine the exact flow direction of the shallow groundwater beneath the site.

Site Description

A map of the site is shown in Figure 2. This map shows the layout of the facility, along with the location of the previous tank excavations and removals. To date, one single-wall fiberglass underground tank remains in service at the facility, and is currently used to store gasoline. The location of the tank is shown on the site map.

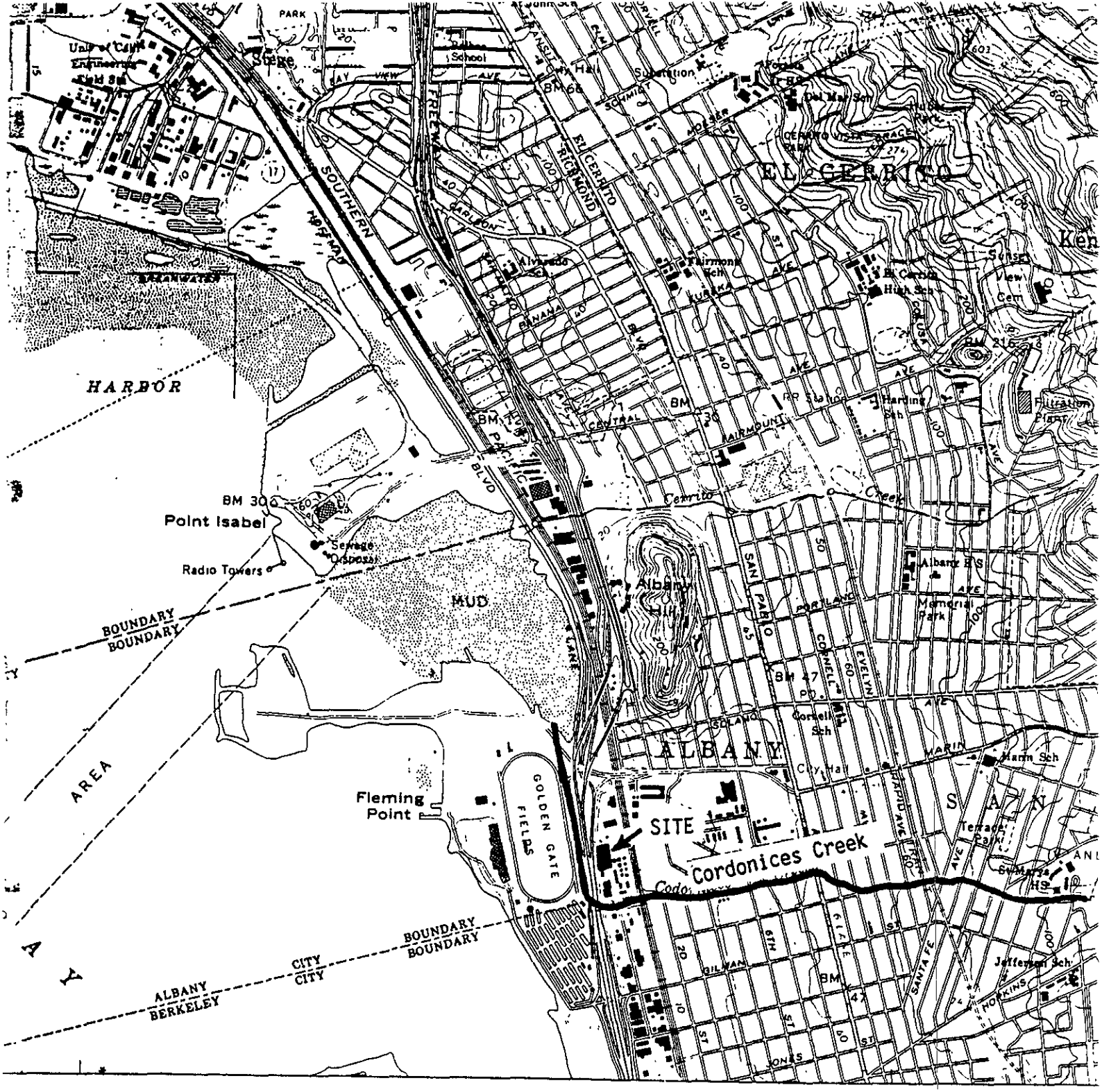

HARBOR
BM 30
Point Isabel
Radio Towers
Sewage Disposal
MUD
BOUNDARY
BOUNDARY
AREA
Fleming Point
GOLDEN GATE FIELDS
SITE
Cordonices Creek
Cerrito Creek
ALBANY
EL CERRITO
CITY
CITY
ALBANY
BERKELEY
BOUNDARY
BOUNDARY
SCALE 1:24 000
1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

FIGURE 1.

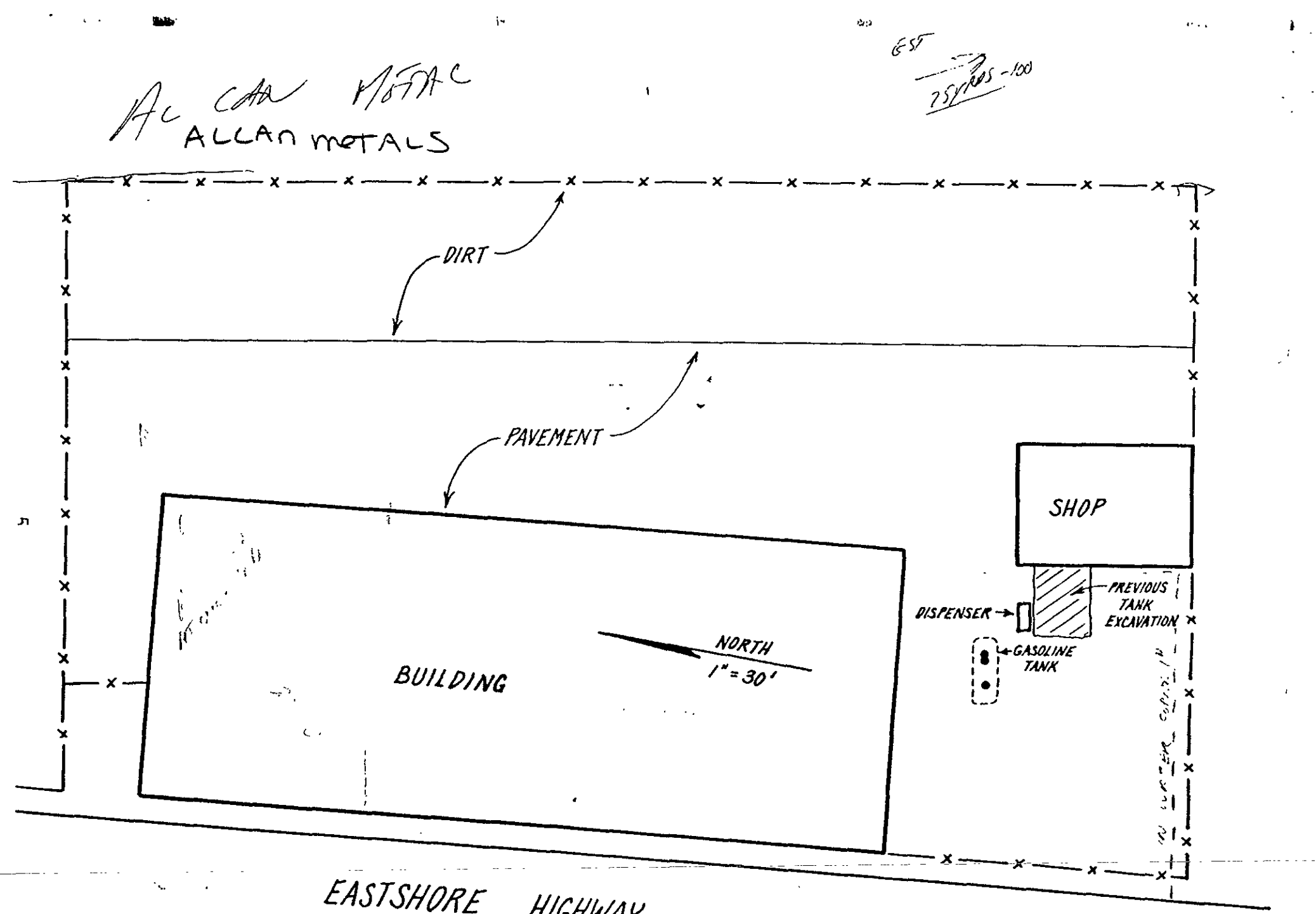


FIGURE 2.

SITE MAP

III. EXTENT OF SOIL CONTAMINATION ON SITE

Since the previous tank removals were conducted by others, little is known as to the magnitude, if any, of soil contamination that was encountered during the excavation. From inspection of the sampling results included in Attachment A, it would appear that high groundwater was encountered during the tank removals (pit water samples were collected in lieu of soil sampling).

The results of the analyses performed on water samples collected from the excavation indicated the presence of Oil and Grease in the pit water at levels up to 17 mg/L, Total Petroleum Hydrocarbons as Gasoline up to 2 mg/L, and Benzene up to 0.180 mg/L.

In addition to petroleum hydrocarbons, the following halogenated organics were detected in the parts-per-billion range:

trans-1,2-Dichloroethylene (6.5 ppb)
Dichloromethane (10 ppb)
1,1,2,2,-Tetrachlorothane (3.4 ppb)
1,1,1,-Trichloroethane (28 ppb)
1,1-Dichloroethane (18 ppb)

)) ?? very little

The plan for determining groundwater contamination, as discussed in Section IV of this proposal, provides for the analysis of all soil and groundwater samples for volatile organics according to EPA method 624/8240. An attempt will be made to determine the concentrations and extent of these halogenated organic compounds, as well as any other non-petroleum volatile hydrocarbons that may be present in the soil and shallow groundwater beneath the site.

IV. PLAN FOR DETERMINING GROUNDWATER CONTAMINATION

Placement of Monitoring Wells

The purpose of the proposed groundwater investigation is to install and sample three on-site monitoring wells in order to 1) determine the direction of shallow groundwater flow beneath the site, and 2) define the extent of any petroleum constituents that may be present in the shallow groundwater beneath the site.

The proposed locations of the wells are shown in Figure 3. The locations have been selected based upon 1) known locations of soil contamination during previous tank removals, 2) the expected shallow groundwater flow direction, and 3) what is believed to be good spacing between data points in order to achieve reasonable plume definitions of any contaminants that may be present in the shallow groundwater beneath the site.

Monitoring Well Installations

Well installation will begin as soon as possible, following approval by the appropriate regulatory agencies. Each well will be installed with a truck-mounted drill rig using 8-inch hollow-stem augers. During the drilling, soil samples for chemical analyses will be collected at 5-foot intervals until the shallow water table is encountered at a depth of approximately 5 to 10 feet below the ground surface. Each soil sample will be collected by driving a split-barrel sampler fitted with clean brass liners. All samples wll be immediately placed on ice, then transported under chain-of-custody to the laboratory by the end of the work day.

x10

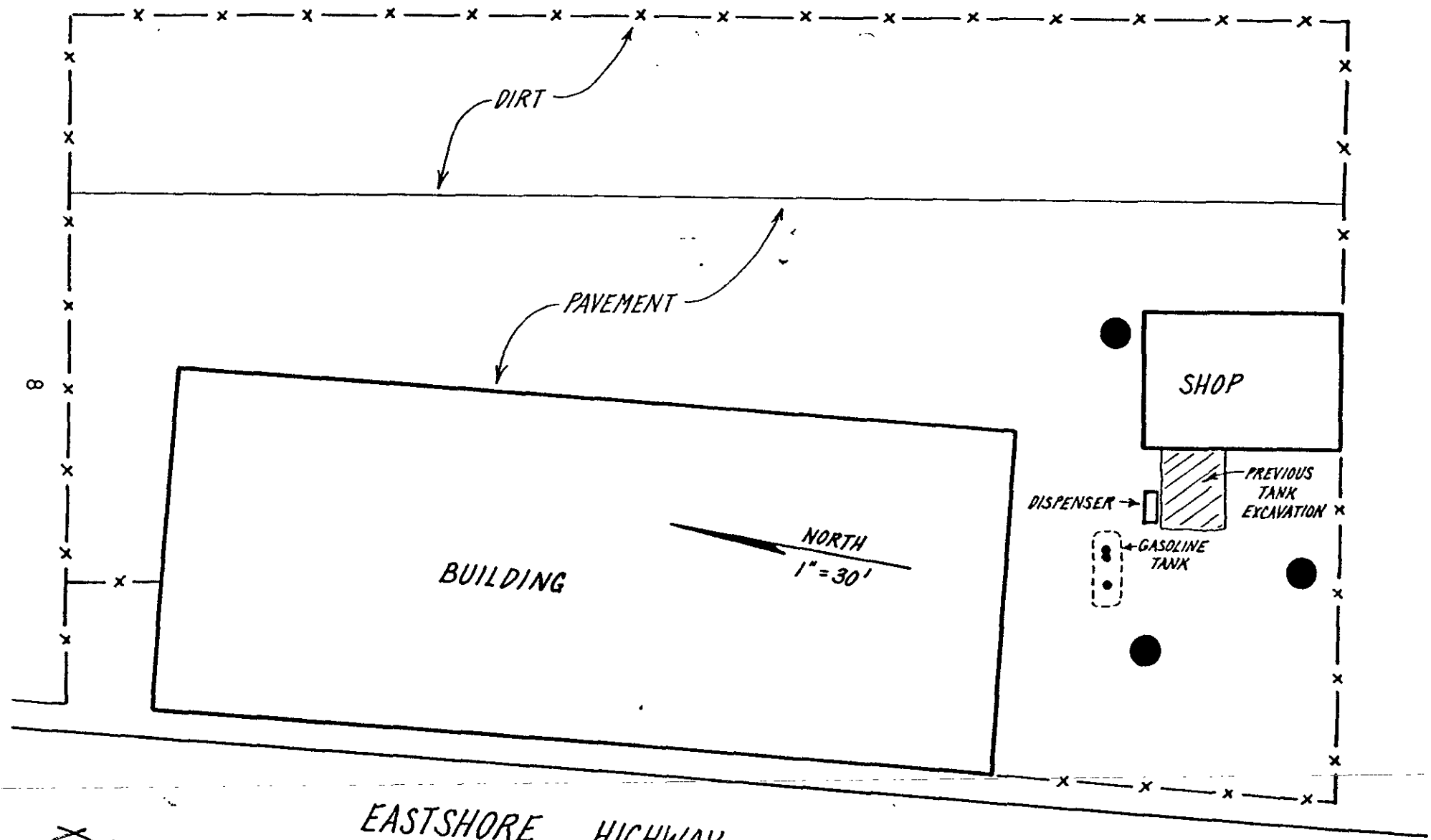


FIGURE 3. Proposed Locations of Monitoring Wells.

The well borings will extend to approximately 10 feet below the shallow water table or until a competent clay layer is encountered (a thickness greater than 5 feet). Each well will be cased to approximately five feet above the shallow water table with 2-inch PVC slotted screen pipe (0.02" slots). The annular space of each well will be packed to one foot above the slotted section with #3 Monterey Sand. At least one foot of wetted bentonite pellets will be placed upon the sand pack, followed by a neat cement/bentonite seal up to the ground surface. Each well will be fitted with a locking steel traffic lid. The borings will be logged in the field by Gary Aguiar, registered civil engineer #34262 (a statement of qualifications is included as Attachment B). A typical well construction diagram is shown in Figure 4.

Prior to the installation of each well, all drilling equipmenmt, including augers, drill stem, and split barrel samplers, will be steam-cleaned on-site.

All drill cuttings will be drummed and stored on-site until the results of laboratory anayises are obtained. Depending upon these results, the cuttings will be disposed of as either a non-hazardous waste, or else as a hazardous waste under proper manifest to an appropriate TSD facility.

In order to determine groundwater flow direction, the top-of-casing elevation at each monitoring well will be surveyed to within 0.01 foot of an established on-site benchmark.

Groundwater Sampling Plan

Within three days of installation, each well will be developed by removing water with a teflon bailer until the water is relatively clear, or until the aparent turbidity of the water being removed has stabilized.

Prior to sampling, each well will be purged by bailing at least 5 casing

10

TYPICAL MONITORING WELL CONSTRUCTION

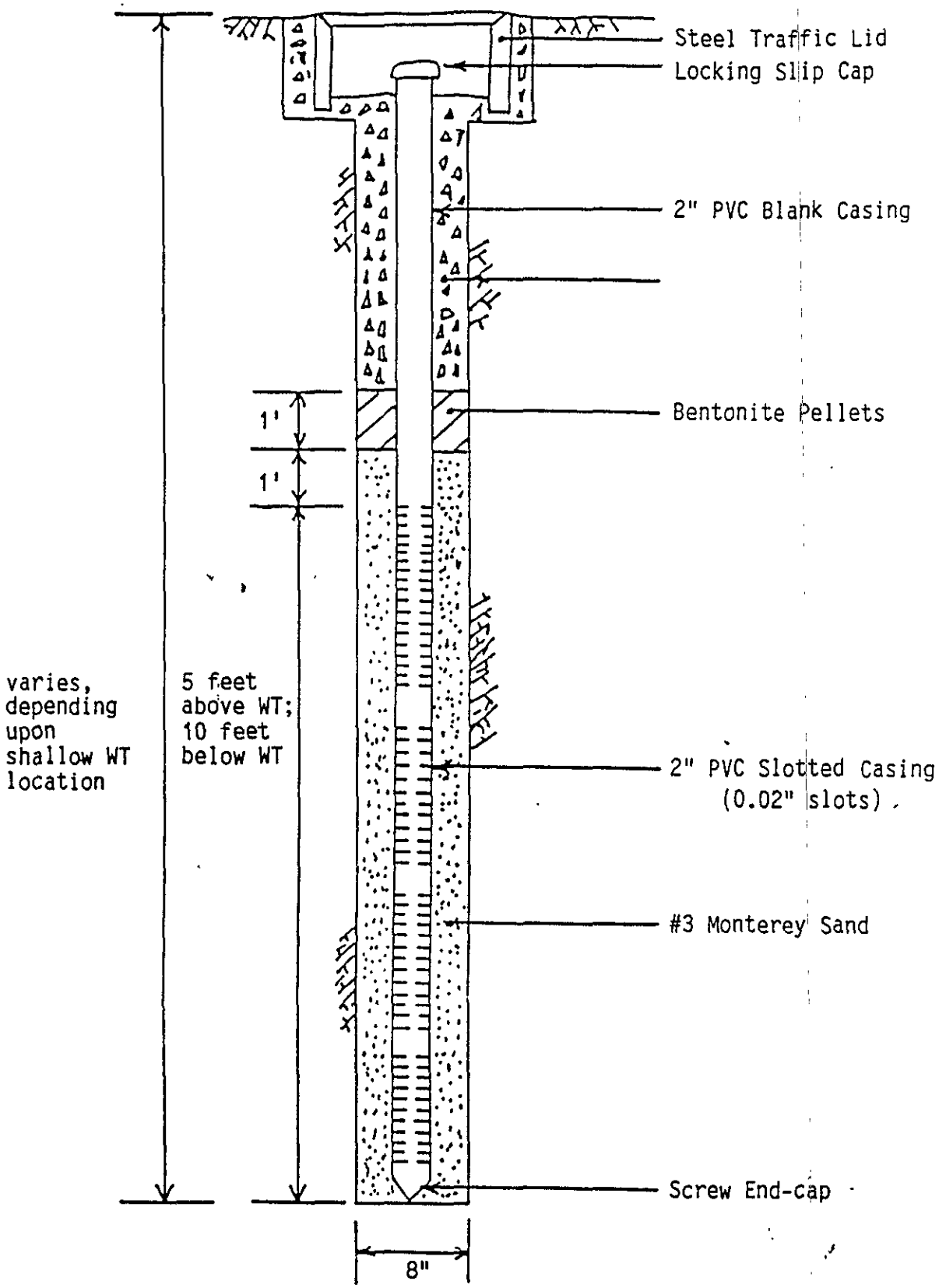


FIGURE 4.
Typical Monitoring Well Construction.

volumes of water. After a well has been adequately purged, a groundwater sample will be bailed and placed in the appropriate containers, as required by the particular laboratory method protocols. All samples will then be immediately placed on ice, then transported under chain-of-custody to the laboratory by the end of each work day.

At the time each monitoring well is sampled, the following information will be recorded in the field: 1) depth-to-water prior to purging, using an electrical well sounding tape, 2) identification of any floating product, sheen, or odor prior to purging, using a clear teflon bailer, 3) sample pH, 4) sample temperature, and 5) specific conductance of the sample.

All analyses will be conducted by a California State DOHS certified laboratory in accordance with EPA recommended procedures. All soil and groundwater samples will be analyzed for 1) total petroleum hydrocarbons as gasoline, 2) BTX, 3) oil & grease, and 4) volatile organics scan (EPA 624/8240).

All water removed from the well during development and purging will be drummed and stored on-site until the results of laboratory anaylses are obtained. Depending upon these results, the water will be sewered as a non-hazardous liquid waste, or else it will be transported as a hazardous liquid waste under proper manifest to an appropriate TSD facility for treatment and disposal.

V. SITE SAFETY PLAN

A set of health and safety operating procedures for field investigations of underground spills of motor oil and petroleum distillate fuel is provided in Attachment C. In order to maintain a safe working environment for field personnel, a copy of these operating procedures will be kept on-site during the field operations, and will be followed in accordance with the magnitude of petroleum contamination encountered.

REGISTERED PROFESSIONAL ENGINEER
GARY H. AGUIAR
No. C-34262
CIVIL
STATE OF CALIFORNIA

Gary Aguiar RCE 34262

Bruce Hageman

ATTACHMENT A

Previous Tank Removal Report

ATTACHMENT 3

HYDROGEOLOGIC INVESTIGATION RESULTS REPORT
June 12, 1990

Copy of final report

HYDROGEOLOGICAL INVESTIGATION RESULTS REPORT

E.C. Buehrer Associates, Inc.
1061 Eastshore Highway
Berkeley, California 94710

Aegis Project No. 90-007

June 12, 1990

Prepared By:
AEGIS ENVIRONMENTAL CONSULTANTS, INC.
801 Riverside Avenue, Suite C
Roseville, California 95678
(916) 782-2110

TABLE OF CONTENTS

TABLES

APPENDICES

FIGURES

1.0 INTRODUCTION

This report presents the results of the subsurface investigation at the E.C. Buehrer Associates, Inc. site located at 1061 Eastshore Highway, Berkeley, Alameda County, California. The subsurface investigation was requested by E.C. Buehrer Associates, Inc. in response to the presence of petroleum hydrocarbons in water beneath the site during a tank closure.

1.1 Purpose

The purpose of the investigation was as follows:

- Characterize the site geologic and hydrogeologic conditions.
- Assess the presence of petroleum hydrocarbons in the soils beneath the site.
- Determine if petroleum hydrocarbons have impacted ground water beneath the site.
- Determine if the contaminant plume from the Alcon property has moved westward and offsite onto the E.C. Buehrer Associates, Inc. property.
- Evaluate the need for further assessment and/or mitigation of petroleum constituents beneath the site.
- Prepare a factual report presenting assessment results including recommendations regarding the need for additional site assessment work and/or remediation.

1.2 Scope Of Work

The work plan and methods of work are presented in the Hageman - Schank, Inc. Proposal for Subsurface Investigation dated November 16, 1989. On March 19, 1990 Aegis Environmental Consultants, Inc. submitted a modification to the Hageman - Schank, Inc. work plan. The modified work plan included one additional monitoring well and three near-surface soil samples taken along the easterly boundary of the site. The monitoring wells and sample locations are presented on Figure 2.

- On April 24 and 25, 1990, a total of four soil borings were drilled at the site. All four of the soil borings were converted to 4 inch diameter ground water monitoring

wells. The soil boring logs are presented in Appendix A, and monitoring well construction details are presented in Appendix B.

- Soil samples were collected from the soil borings at five-foot intervals to classify the soils and screen for the presence of petroleum constituents. The soils were screened for the presence of organic vapors with a photoionization detector according to methods described in Section 7.0 of this report.

- Based upon the results of soil classification and screening one or more soil samples from each soil boring was submitted to a State certified laboratory and analyzed for petroleum constituents. The following E.P.A. methods were utilized; (1) oil and grease (TPH) E.P.A. method 9071, (2) cadmium, zinc and chromium E.P.A. method 6010, (3) lead E.P.A. method 7421, (4) for halogenated volatile organics E.P.A. methods 8010, GC/FID/5030 gasoline, GC/FID/3550 diesel and motor oil, (5) for BTEX E.P.A. method 602, (6) for petroleum constituents (water) E.P.A. method 601, (7) for PCB's E.P.A. method 8080, and (8) for volatile organic priority pollutants (TCE, solvents, etc.) E.P.A. method 8260.

- After development of the monitoring wells the riser pipe elevations were surveyed and referenced to a datum by a licensed California surveyor.

- Water samples were recovered from each of the monitoring wells and submitted to a state certified laboratory to be analyzed for petroleum constituents.

- Three near-surface soil samples were collected along the eastern boundary of the E.C. Buehrer Associates, Inc. site. The three samples were collected in order to determine if the contaminant plume from the adjacent Alcon property has migrated onto the E.C. Buehrer Associates, Inc. property. Surface samples SB-1 and SB-2 were analyzed for volatile organic priority pollutants (TCE, solvents, etc.) by E.P.A. method 8260, and sample SB-3 was analyzed for PCB's utilizing E.P.A. method 8080. Sample locations are presented on Figure 2.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The E.C. Buehrer Associates, Inc. site is located at 1061 Eastshore Highway, Berkeley, Alameda County, California. The site has been occupied by the current owners for several years. Topographic site map is presented on Figure 1.

2.2 Site Description

The site facilities consist of two buildings, one 1000 gallon single wall underground gasoline tank, and one 550 gallon double-wall, above ground, waste oil tank. In February 1988, one 300 gallon underground waste oil tank and one 1000 gallon underground gasoline tank were permitted and removed from the site. The large building along the western boundary of the site is utilized for offices (about 15%) and work bays (about 85%) for equipment repair. The small building along the eastern boundary of the site is utilized as a welding and machine shop. The site is constructed on Bay Fill. The site map is presented on Figure 2.

2.3 Adjacent Land Uses

The site is located in an industrial area of Berkeley, California. Adjacent to the site in an easterly direction is an open area that was formerly an Alcon Aluminum Metals Plant; to the north there exists a sprinkler and plumbing supply business; to the south a bus repair shop; and the Eastshore Highway (First Street) is located on the west boundary of the E.C. Buehrer property.

2.4 Previous Investigations and Leak History

On February 18, 1988, a 300 gallon steel, single wall, underground waste oil tank and a 1000 gallon steel, single wall, underground gasoline storage tank were excavated and removed from the site. Reportedly, in December 1987, the 300 gallon waste oil tank failed a precision tank test. The failed test, in part, prompted the decision to remove the waste oil tank. Reportedly, the 1000 gallon gasoline storage tank had not been in use for the previous 2 to 3 years. There are no records that a tank tightness test was ever performed on the 1000 gallon gasoline tank. The excavation and tank pull was conducted by Willis Brothers Excavating, Pacheco, California. On 3-14-88 the tank pull samples were analyzed by Trace Analysis Laboratory, Inc. (T.A.L.) of Hayward, California. It appears that high groundwater was encountered during the tank removal since pit water samples were taken in lieu of soil samples. The results of the analyses performed on the water samples are as follows:

Tank pull - 1000 gallon gasoline storage tank,

E.P.A. methods 8015 and 8020 modified.

Water sample at 1 foot beneath gasoline tank

Benzene - - - - - - - - - - - - - - - 180 PPB

Toluene - - - - - - - - - - - - - - - 23 PPB

Xylenes - - - - - - - - - - - - - - - 270 PPB

Volatile Hydrocarbons - - - - - - - 2000 PPB

E.P.A. method 8010

1,1 - Dichloroethane - - - - - - - - 18 PPB

Dichloromethane - - - - - - - - - - - 10 PPB

1,1,2,2 - Tetrachlorethane - - - - 3.4 PPB

Trans. 1,2 - Dichloroethylene - - - 6.5 PPB

1,1,1 - Trichloroethane - - - - - - 28 PPB

Tank Pull - 300 gallon waste oil tank

E.P.A. methods 503E and 8020 modified

Water sample 1 foot beneath tank

Method 503 E	Detection Limit	Concentration
Oil and grease	1000	17000 PPB
Method 8020		
Benzene	3	100 PPB
Toluene	5	9.9 PPB
Xylenes	9	240 PPB
Trans - 1,2 Dichloroethylene	0.5	6.5 PPB

Dichloromethane	0.5	10 PPB
1,1,2,2, Tetrachloroethane	0.5	3.4 PPB
1,1,1 - Trichlorethane	0.5	28 PPB
1,1 - Dichloroethane	0.5	18 PPB

2.5 Hydrogeology and Stratigraphy

Based on surface topography and various regional shallow groundwater maps the shallow groundwater beneath the site is expected to flow westerly from the Berkeley Hills and the San Pablo Ridge (area of groundwater recharge) toward Cordonices Creek and the San Francisco Bay (area of discharge). The soils beneath the site consist of Bay fill materials (10' ±), quaternary alluvium consisting of clays, silts, sands and gravels which overlay Franciscan clays, silts, and sandstone bedrock (Geologic map of California, San Francisco sheet, Division of Mines and Geology, 1980). Top of the first groundwater was encountered at about 3 and one-half feet below ground surface. Due to local topography, and location of the site, the tidal influence on the shallow groundwater is unknown at this time. The placement of the four monitoring wells was based upon the assumption of a westerly gradient, however, water level data from the four wells will determine a more precise flow direction of the shallow groundwater beneath the site. A ground water gradient map is presented on Figure 3 and the cross-section map is presented on Figure 4.

3.0 PROJECT RESULTS

On April 24 and 25, 1990, a total of four soil boring were advanced at the locations shown on Figure 2. Depths of the soil borings, sample descriptions and sample intervals are shown on boring logs presented in Appendix A. All four of the soil borings were completed as groundwater monitoring wells. Monitoring well construction details are presented in Appendix B.

A total of four soil samples, collected from the soil borings, were submitted to a State certified laboratory for analyses. The four soil borings were completed as monitoring wells, and a water sample was collected from each well and submitted to a State certified laboratory for analyses. In addition, three near-surface soil samples (SB-1, SB-2, SB-3) were collected along the eastern boundary of the E.C. Buehrer Associates, Inc. property. The three near-surface soil sample locations and monitoring well locations are shown on Figure 2.

3.1 Subsurface Conditions

Soil types recovered from the soil borings consist of fill materials, dark brown to black clays, black organic mud, and brown clays with gravels inclusions. A saturated zone was encountered at about 3 1/2 feet below grade. The location of a generalized cross-section A-A' is presented in Figure 2. Cross section A-A' is presented in Figure 4.

3.2 Soil Chemical Analyses Results

Soil samples from each boring were submitted for chemical analysis based on odor observations, color, and photoionization detector (PID) screening results.

The results of soil sample analyses indicates the presence of oil and grease at levels ranging from 450 P.P.M. (MW-1) to 6400 P.P.M. (MW-2), motor oil constituents ranging from non-detect (MW-2) to 1700 P.P.M. (MW-4), diesel constituents ranging from 1.9 P.P.M. (MW-2) to 900 P.P.M. (MW-4), and gasoline constituents ranging from 1 P.P.M. (MW-3) to 130 P.P.M. (MW-4). The zinc concentration level range from 70 P.P.M. (MW-2) to 520 P.P.M. (MW-1). The soil samples were collected from a point opposite the ground water interface at about 3 1/2' to 5' below ground surface.

In addition to the petroleum hydrocarbon constituents in the soil, the following halogenated organics were detected (in parts per billion range). 1.1 Dichloroethane = 5.6 P.P.B., tetrachloroethane = 4.6 P.P.B., trichloroethane = 4.0 P.P.B., and chlorobenzene = 0.90 P.P.B.

There are no records available that indicate an on-site source for the diesel constituents in the soil.

Analyses of surface soil samples (SB-1, SB-2, SB-3) along the east boundary of the E.C. Buehrer property indicate the following contaminant levels; soil sample SB-3 was analyzed for Polychlorinated Biphenyls (E.P.A. method 8080) and the analyses indicated Aroclor 1254 PCB constituent levels at 300 PPB (.30 PPM).

Soil samples SB-1 and SB-2 were analyzed for volatile organic priority pollutants (TCE's, solvents, etc.) by E.P.A. method 8260 and the analytical data indicates that, excepting toluene, all of the compounds analyzed indicate non-detectable concentrations. Toluene concentrations in SB-1 and SB-2 are 2 PPB and 4 PPB respectively.

The soil analytical results are summarized in Table 1. Copies of the certified analytical results are included in Appendix C.

3.3 Water Analyses Results

On April 25, 1990, ground water samples were collected from the four monitoring wells. Ground water samples analyzed for gasoline by E.P.A. method GC-FID/5030, for BTEX by E.P.A. method 602, and for diesel and motor oil by GC FID/3510. Benzene constituents in the water range from non-detect in MW-2 to 29 P.P.B. in MW-3, ethylbenzene non-detect in MW-2 to 1.0 P.P.B. in MW-1, toluene non-detect in MW-2 to 3.4 P.P.B. in MW-1, xylenes non-detect in MW-2 to 5.8 P.P.B. in MW-1. Table 2 summarizes the ground water analytical results. Copies of the certified analytical results are included in Appendix C.

4.0 DISCUSSION

4.1 Petroleum Hydrocarbon Constituents In Soil

As shown on the generalized cross section the soils beneath the site are heterogeneous with a diversity which includes fill soil, gravels, black mud, and clays. Petroleum hydrocarbon constituents indicated by odor and analytical results appear to be concentrated in the interval between the surface and the ground water interface at about 3 1/2 feet. Bore holes (MW-2, MW-3, MW-4) located north and west of the welding and machine shop reveal elevated petroleum constituents as follows; oil and grease 4300-6400 P.P.M., motor oil 200-1700 P.P.M., diesel 30-900 P.P.M. and gasoline 1-130 P.P.M. The primary source of the oil and grease, motor oil, and gasoline constituents in the soil appears to have an on-site source, however, the source of the diesel (30-900 P.P.M.) constituents are unknown. On February 18, 1988, a 300 gallon underground waste oil tank and a 1000 gallon underground gasoline tank were excavated and removed from the site. At the present time the site facilities consist of one 1000 gallon underground gasoline tank and one 550 gallon, above ground, waste oil tank. There are no records available that indicate an on-site source for the diesel constituents in the soil. The analytical data revealed the following diesel constituents in the soil; MW-1 - 33 P.P.M., MW-2 - 1.9 P.P.M., MW-3 - 30 P.P.M., and MW-4 - 900 P.P.M. An oil and grease ISO-concentration contour map is presented on Figure 5.

The oil and grease, motor oil, and diesel constituent concentrations appear to be above action levels in the southwest portion of the E.C. Buehrer Associates, Inc. site.

In order to check for the possible migration of contaminants from the adjacent Alcon site, three surface samples (SB-1, SB-2, SB-3) were taken along the eastern boundary of the E.C. Buehrer property. Surface samples SB-1 and SB-2 were analyzed for volatile organics (E.P.A. method 8260) however, all compounds revealed non-detectable concentrations with the exception of toluene which indicated concentrations of 2 P.P.M. and 4 P.P.M. respectively. These toluene concentrations are below action level. Surface sample SB-3 was analyzed for PCB's utilizing E.P.A. method 8080. The analytical data for SB-3 indicates a 300 P.P.B. (.30 P.P.M.) concentration for PCB's which is below action level. Sample locations are presented on Figure 2, and analytical data is presented in Tables 1 and 2.

4.2 Petroleum Hydrocarbon Constituents In Water

Low levels of petroleum constituents were present in the ground water. Benzene constituents range from non-detectable in MW-2 to 29 P.P.B. in MW-3, ethylbenzene constituents range from non-detectable in MW-2 to 1.0 P.P.B. in MW-1, toluene constituents range from non-detectable in MW-2 and MW-4 to 3.4 P.P.B. in MW-1, and xylenes range from non-detectable in MW-2 to 5.8 in MW-1.

The site is located about 1400 feet east of the San Francisco Bay, and additional ground water sampling events will be needed to determine the tidal influence, salinity, and beneficial use for ground water.

5.0 CONCLUSIONS

- A zero line of soil and ground water contamination beneath the site has not been defined.
- Petroleum hydrocarbon constituents in excess of action levels are present beneath the site. Additional site assessment work will be necessary for plume identification. Ground water quality, salinity, and beneficial use will be determined in the second phase of the site assessment work.
- The maximum vertical extent of petroleum hydrocarbon constituents in the soil appears to be from the surface down to the ground water interface at about 3 1/2' to 5 feet.

- The horizontal extent of petroleum constituents in the soil remains undefined. The highest oil and grease concentrations were identified in MW-2 (6400 P.P.M.) which is down-gradient (westerly) from the machine shop and underground tank area. The highest diesel concentrations were identified in MW-4 (900 P.P.M.) which is northeast of the machine shop. The oil and grease contaminants increase in a westerly direction and the ground water plume may extend off-site.

6.0 RECOMMENDATIONS

- Installation of four additional monitoring wells as shown on Figure 6. The additional monitoring wells will provide information for plume definition and evaluation of the possible off-site extent of petroleum constituents.

- Development and sampling of the four new monitoring wells (MW-5, MW-6, MW-7, MW-8) and the sampling of the four existing monitoring wells (MW-1, MW-2, MW-3, MW-4).

- Submit soil and ground water samples to a California-certified laboratory to be analyzed for BTEX, T.P.H., diesel, motor oil, and oil and grease.

- Results of these tasks will be submitted in a Phase II site assessment report. Remediation measures at the site for both soil and ground water (if needed) will be discussed in a Remedial Action Plan Report that will be submitted after or concurrently with the Phase II Site Assessment Report.

7.0 METHODS AND PROCEDURES

7.1 Drilling and Soil Sampling

A CME 55 drilling rig equipped with 10-inch-ID hollow-stem augers was used to drill the 4 soil borings at the site. Prior to commencement of work at the site, and after completion of each soil boring, all sampling and drilling equipment was cleaned with a portable steam cleaner. A modified California split-barrel sampler containing three internal brass liner tubes (each six inches long and two inches in diameter) was used to extract soil samples from the soil borings. The sampler was advanced 18 inches into the undisturbed soils ahead of the auger by driving it with a 140-pound rig-operated hammer. Upon retrieval, one brass tube was sealed with aluminum foil and a plastic cap, labeled with a unique sample

with aluminum foil and a plastic cap, labeled with a unique sample number and sample information, placed in a "zip-lock" plastic bag and packed in a cooler containing ice for later shipment to a California-certified laboratory. One sample from each sampler was extracted and placed in a sealed jar until completion of drilling activities. A total of 8 soil samples were collected from soil borings at the site.

Samples placed in jars were screened for total organic vapors by utilizing a portable photoionization detector to sample the head space in each jar. Based on this screening information, a total of 4 soil samples were selected for chemical analysis.

7.2 Soil Classification

All soil samples were classified by a geologist in accordance with the United Soil Classification System.

7.3 Monitoring Well Installations and Development

Monitoring wells were installed by placement of 4-inch-diameter blank PVC casing and 4-inch-diameter PVC well screen with 0.10 slot size inside the 10-inch-ID hollow-stem augers. The gravel pack was poured down the hollow-stem augers in two-foot-thick increments after which the hollow-stem augers were pulled approximately two feet from the borehole. This process continued until the gravel pack had been placed adjacent ot the well screen and extended about two feet above the top of the screen. A two-foot-thick bentonite seal, was then placed by the same process above the well screen using bentonite pellets. After placement of the bentonite seal the augers were pulled from the borehole and the annular space between the well casing and hole was sealed with a cement-bentonite gout to the ground surface. Each well was fitted with a PVC cap and a lockable protective plastic well cover. Monitoring well completion diagrams are presented in Appendix B.

All monitoring wells were developed by bailing a minimum of 12 gallons from each well. During development, specific conductance, pH, and temperature of the developed water was recorded. All developed water was placed in steel drums on site.

7.4 Ground Water Sampling

Following development of each well, and after a minimum of an additional three-wetted-casing volume had been removed from each well, ground water samples were collected with a laboratory cleaned teflon bailer. Measurements of pH, specific conductance, and

temperature were made after the removal of each wetted casing volume. Ground water samples were appropriately labeled, chain-of-custody forms completed, and stored on ice from the time of collection through the time of delivery to a California-certified laboratory.

7.5 Water-Level Measurements

Following well development and sampling, in order to allow ample time for water levels to stabilize, water levels were measured by means of an electrically operated water-level indicator and recorded to the nearest 0.01 foot.

TABLE 1

SOIL ANALYTICAL RESULTS

Soil Boring	Depth	Gas	Diesel	Motor Oil	Oil and Grease
MW-1	5	1.4 PPM	33 PPM	160 PPM	450 PPM
MW-2	5	ND	1.9 PPM	ND	6,400 PPM
MW-3	5	1.0 PPM	30 PPM	200 PPM	4700 PPM
MW-4	3	130 PPM	900 PPM	1700 PPM	4300 PPM

1.1 Dichloroethane	Tetrachloroethene	Trichloroethene
ND	ND	
ND	ND	
ND	ND	
5.6 PPM	4.6 PPM	4.0 PPM

METALS

Soil Boring	Depth	Cadmium	Chromium	Lead	Zinc
MW-3	5'	ND	36 PPM	9.3 PPM	87 PPM
MW-4	3'	ND	69 PPM	38 PPM	190 PPM

POLYCHLORINATED BIPHENYLS (PCB's)

Soil Sample	Depth	Aroclor 1254
SB-3	Near surface at about 2'	300 PPB

ND = Not Detected
PPM = Parts per million
PPB = Parts per billion

TABLE 2

WATER ANALYTICAL RESULTS

Soil Boring	Gasoline	Diesel	Motor Oil	BETX			
				Benzene	Ethylbenzene	Toluene	Xylenes
MW-1	0.26 PPM	0.24 PPM	ND	3.5 PPB	1.0 PPB	3.4 PPB	5.8 PPB
MW-2	0.21 PPM	0.22 PPM	ND	ND	ND	ND	ND
MW-3	0.33 PPM	0.23 PPM	ND	29 PPB	ND	0.6 PPB	1.3 PPB
MW-4	0.22 PPM	0.26 PPM	0.87 PPM	2.1 PPB	0.9 PPB	ND	3.9 PPB

ND = Not Detected
PPM = Parts per million
PPB = Parts per billion

8.0 REMARKS/SIGNATURES

The interpretations and conclusions contained in this report represent our professional opinions. These opinions are based on currently accepted geological and engineering practices in use at this time and for this specific site. Other than this, no warranty is implied or intended.

AEGIS ENVIRONMENTAL CONSULTANTS, INC.

This report was reviewed by:

_____
Brian Garber
Contract Manager

Date: _____

This report was prepared by:

The work described herein will be performed under the direct Supervision of a State of California registered professional geologist:

_____
Pat Wright
Registered Geologist #529

Date: _____

APPENDIX A

Figures

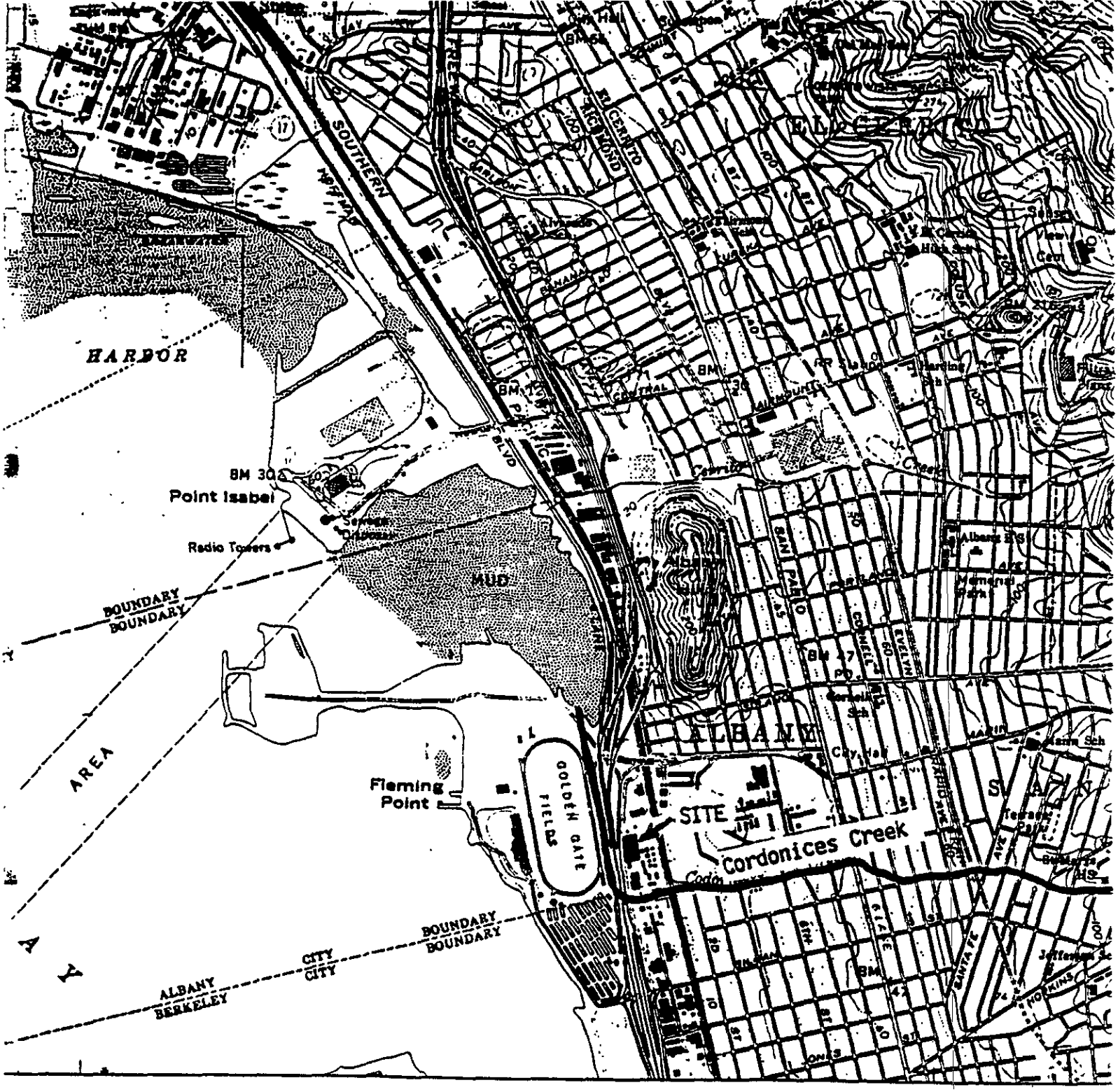
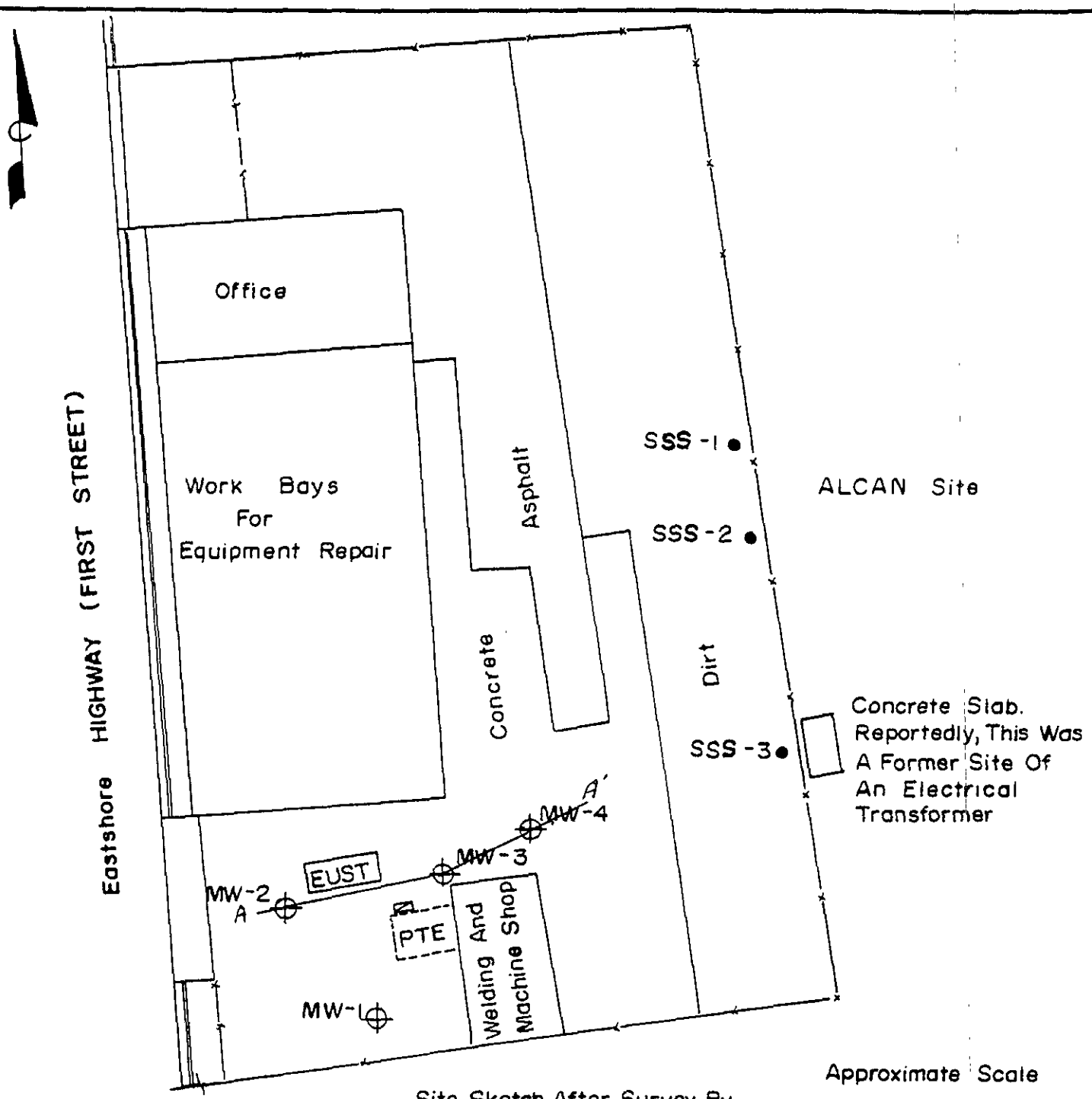

HARBOR
SOUTHERN PACIFIC
EL CERRITO
ALBANY
BM 30
Point Isabel
Radio Towers
MUD
BOUNDARY
BOUNDARY
AREA
Fleming Point
GOLDEN GATE FIELDS
SITE
Cordonices Creek
BOUNDARY
BOUNDARY
CITY
CITY
ALBANY
BERKELEY
SCALE 1:24000
1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

FIGURE 1.



Site Sketch After Survey By
Tom O. Morrow, Inc.
May, 1990

Approximate Scale
1" = 40'
0 40

LEGEND

- Monitoring Well
- Surface Soil Sample
- Dispenser

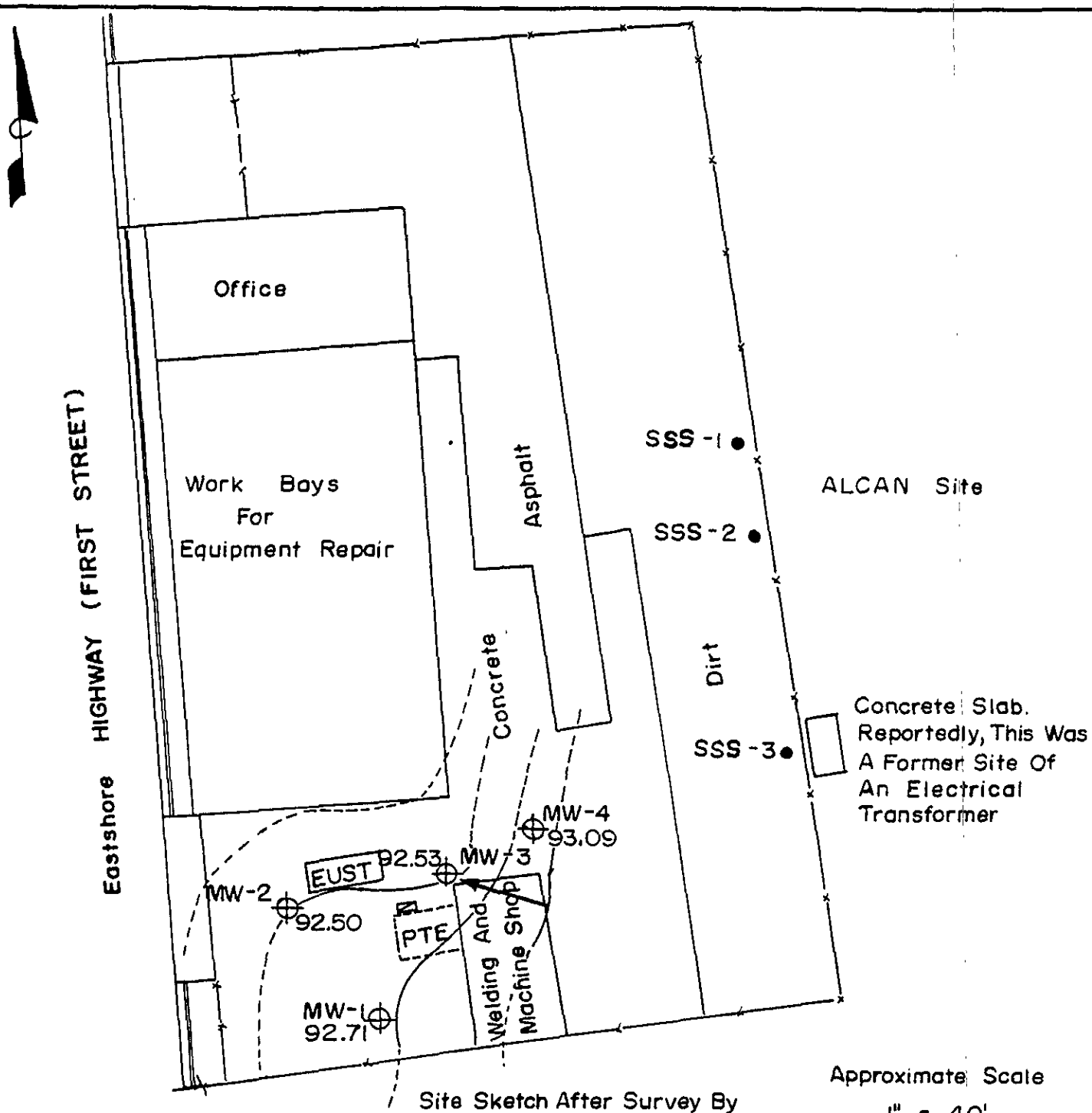
NOTE

PTE = Previous Tank Excavation
EUST = Existing Underground Storage Tank

FIGURE 2
SITE MAP
E C Buehrer Associates, Inc.
1061 Eastshore Highway
Berkeley, Ca.

AEGIS Job No. 90-007

DRAWN BY: Ed Bernard DATE: May 11, 1990
REVIEWED BY: DATE:



LEGEND

- Monitoring Well
- Surface Soil Sample
- Dispenser
- Direction Of Ground Water Flow

NOTE

PTE = Previous Tank Excavation

EUST = Existing Underground Storage Tank

FIGURE 3

GROUND WATER GRADIENT MAP

E C Buehrer Associates, Inc.

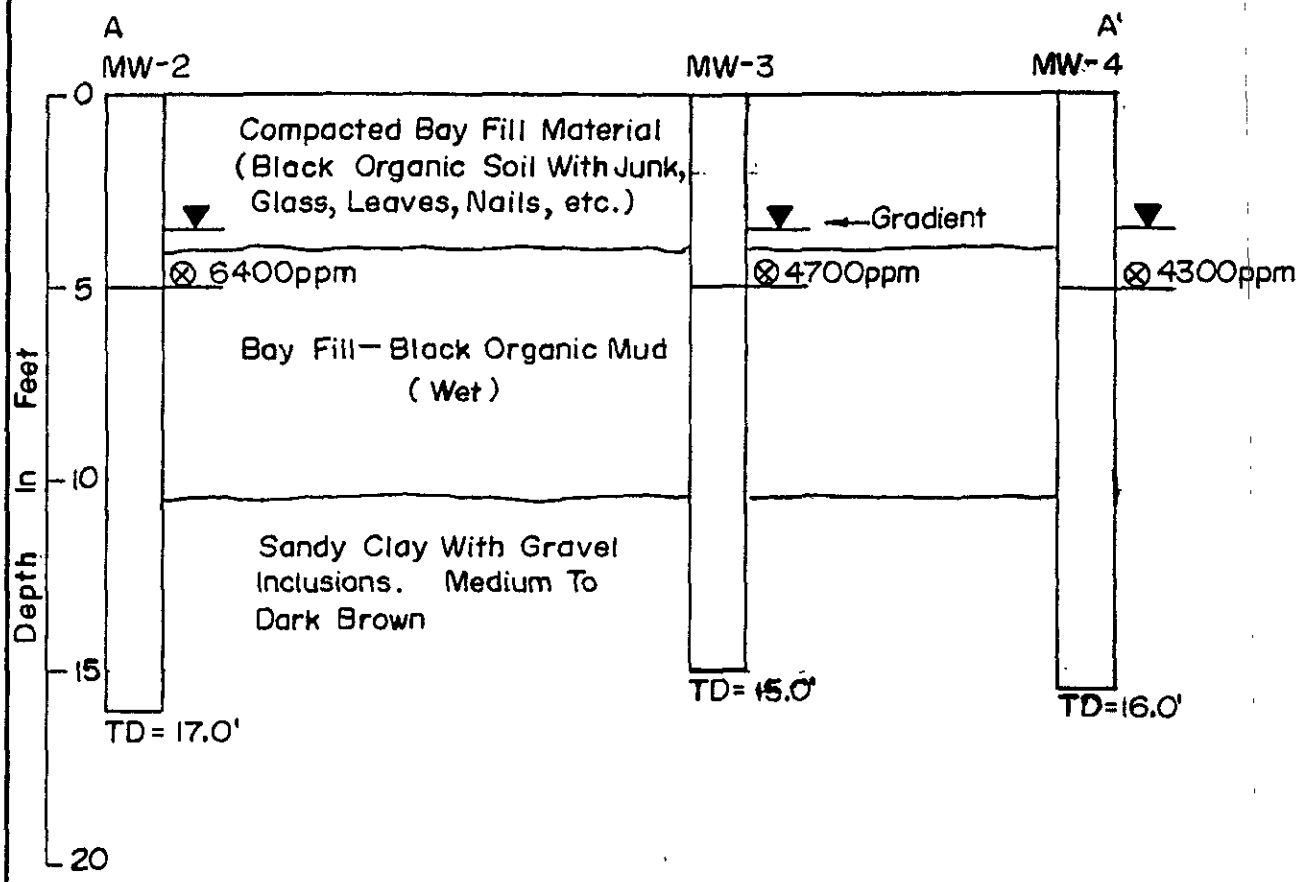
1061 Eastshore Highway

Berkeley, Ca.

AEGIS Job No. 90-007

DRAWN BY: Ed Bernard DATE: May 11, 1990

REVIEWED BY: DATE:



LEGEND

⊗ Oil and Grease

▼ Static Water Level

← Gradient Direction Of Ground Water Flow

SCALE

Horizontal 1" = 15'

Vertical 1" = 5'

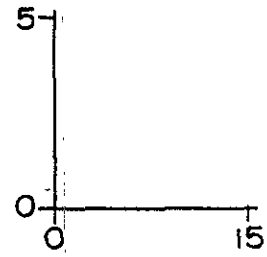
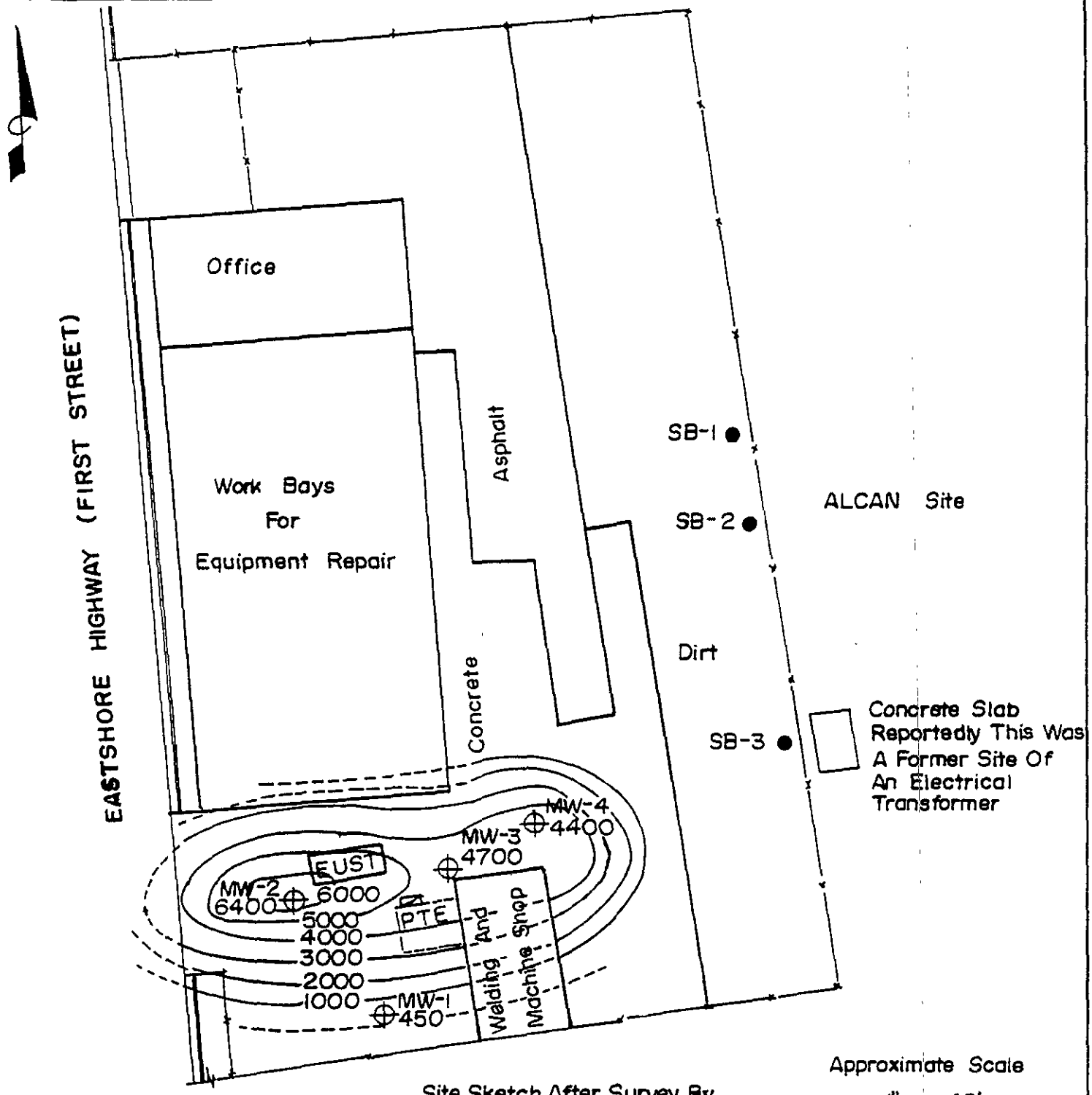


FIGURE 4
CROSS SECTION A-A'
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway
Berkeley, Ca.

AEGIS Job No. 90-007

DRAWN BY: Ed Bernard DATE: May, 30, 1990
REVIEWED BY: DATE:



Site Sketch After Survey By
Tom O. Morrow, Inc.
May, 1990

Approximate Scale
1" = 40'
0 40

LEGEND

⊕ MW-1 450	Monitoring Well Concentration Of Oil And Grease Constituents In ppm
●	Soil Boring
▨	Dispenser

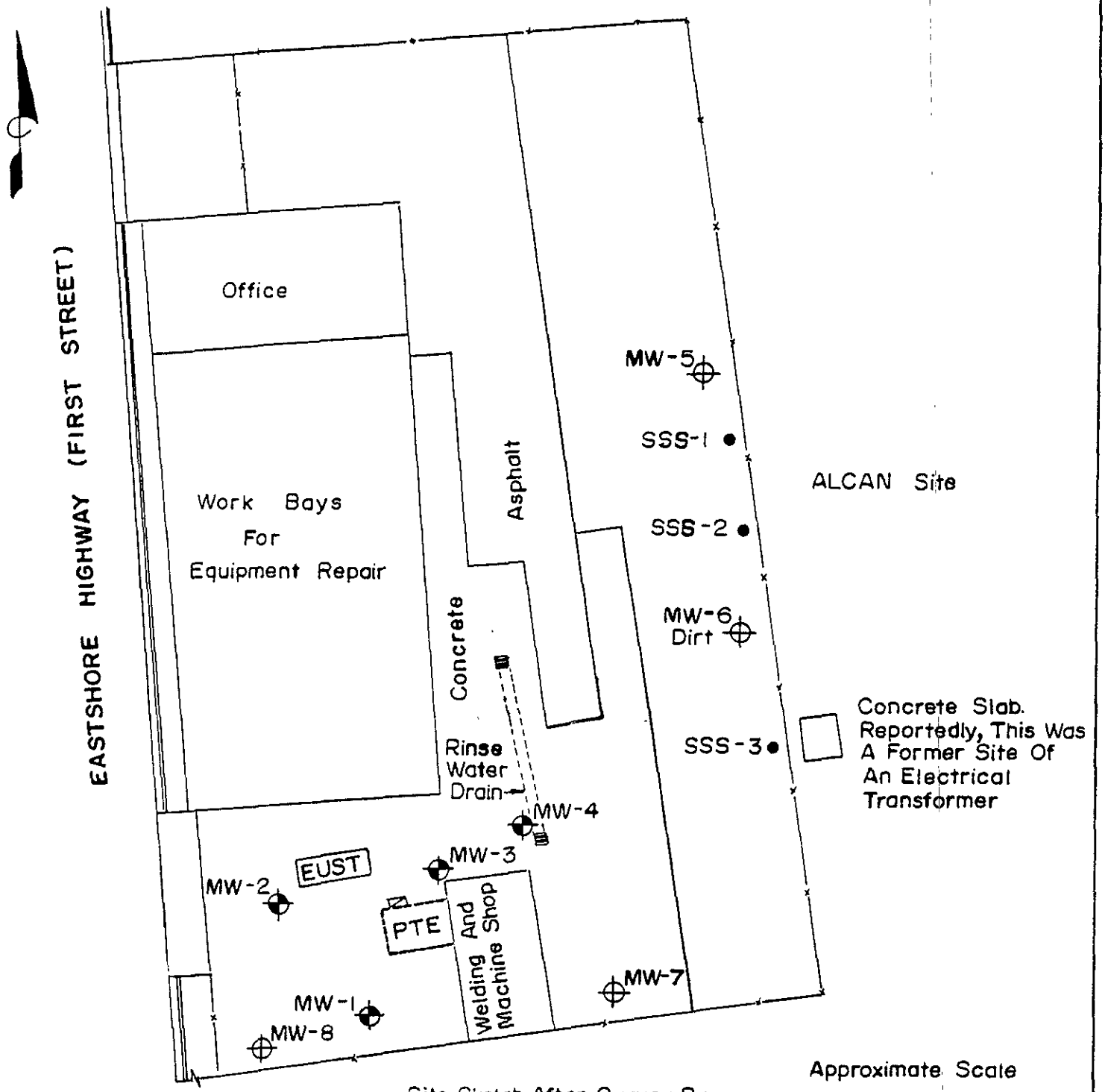
NOTE

ppm	=	Parts Per Million
PTE	=	Previous Tank Excavation
EUST	=	Existing Underground Storage Tanks

FIGURE 5
OIL & GREASE ISO-CONCENTRATION CONTOUR MAP APRIL 25, 1990
E.C.Buehrer Associates, Inc.
1061 Eastshore Highway
Berkeley, Ca.

AEGIS Job No. 90 - 007

DRAWN BY: Ed Bernard DATE: May 31, 1990
REVIEWED BY: DATE:



Site Sketch After Survey By
Tom O. Morrow, Inc.
May, 1990

Approximate Scale
1" = 40'
0 40

LEGEND

- Monitoring Well
- Surface Soil Sample
- Dispenser
- Monitoring Well (Proposed)

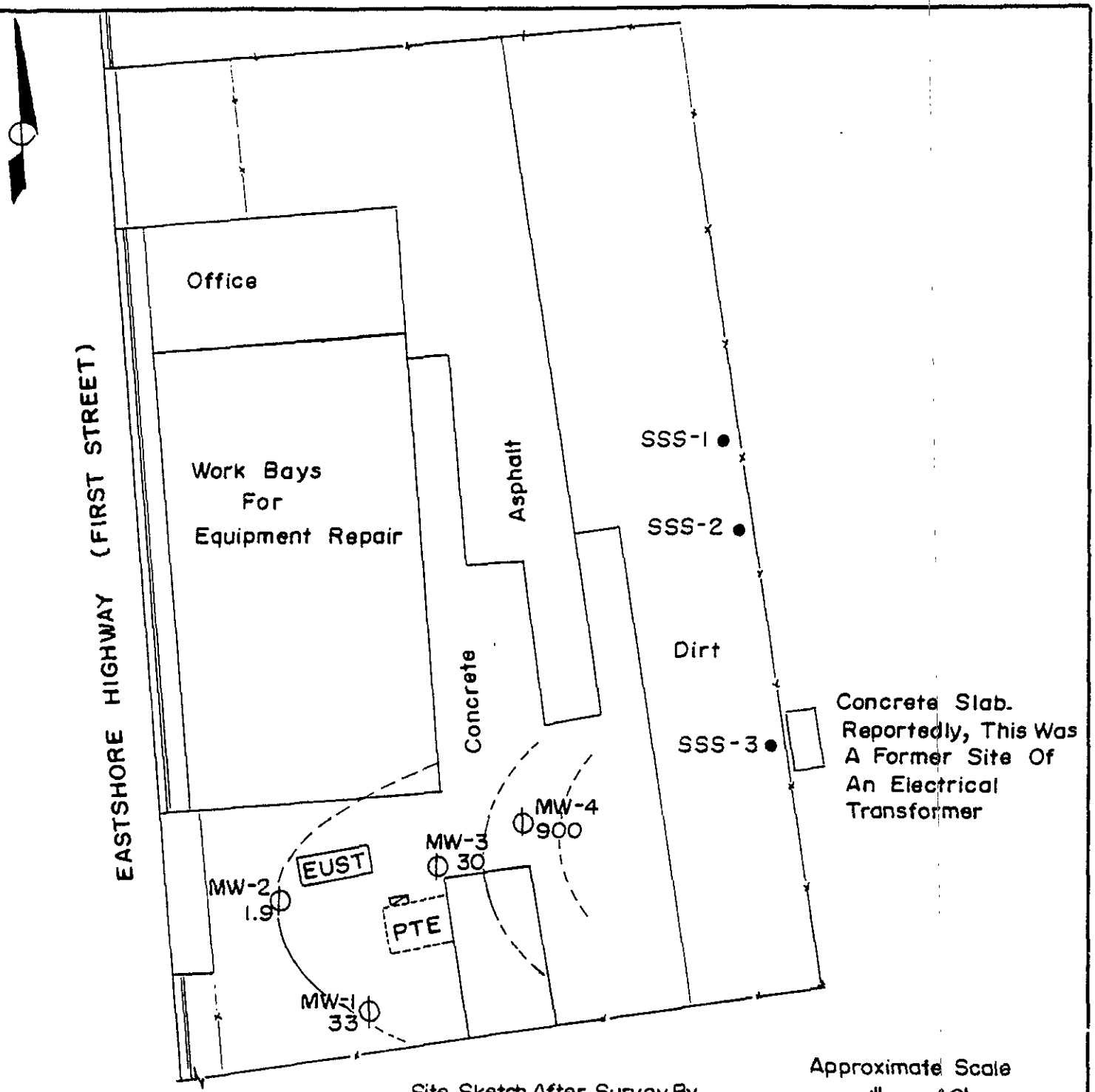
NOTE

PTE = Previous Tank Excavation
EUST = Existing Underground Storage Tanks

FIGURE 6
PROPOSED MONITORING WELL LOCATIONS
E.C. Buehrer Associates, Inc.
1061 Eastshore Highway
Berkeley, Ca.

AEGIS Job No. 90-007

DRAWN BY: Ed Bernard **DATE: June 8, 1990**
REVIEWED BY: **DATE:**



Site Sketch After Survey By Tom O. Morrow, Inc. May, 1990

Approximate Scale
1" = 40'
0 40

LEGEND

- Monitoring Well
- Surface Soil Sample
- Dispenser
- 900 ppm - Diesel

NOTE

ppm = Parts Per Million
PTE = Previous Tank Excavation
EUST = Existing Underground Storage Tanks

FIGURE 7
DIESEL ISO-CONCENTRATION CONTOUR MAP APRIL 25, 1990
E.C. Buehrer Associates, Inc.
1061 Eastshore Highway
Berkeley, Ca.

AEGIS Job No. 90-007

DRAWN BY: Ed Bernard **DATE:** June 8, 1990
REVIEWED BY **DATE:**

APPENDIX B

Soil Borings

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: MW-1	SHEET 1 OF 1
E.C. Buehrer & Ass. Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: PC Exploration	DRILLING METHOD: 6.5" HSA	
	DRILLER: Carl Boling	DRILLING RIG: Mobile B 53	
LAND OWNER: E.C. Buehrer & Ass. Inc.	START DATE: 4/25/90 TIME: 13:30 HRS	COMPLETED: 4/25/90 TIME: 15:45 HRS	

STAMPLE	SAMPLER	BLOWNTS	SAMPLE	DEPTH (ft.)	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
				0	Surface: concrete		
ctg					Clay: dark brown, firm, moist.	0.0	NO PETROLEUM ODOR
* SS	MW1 /A	2 2 2	3.0 to 4.5		CH		
				5	Clay: black, organic, some fill material, wet.	3.0	"
					OH		
		8					"
SS	MW1 /B	9 11	10.0 to 11.5	10	Clay: black, organic, smooth, moderately smooth, wet.	2.0	
					OH		
SS	MW1 /C	NA	15.0 to 16.5	15	Gravelly Clay: brown, moist.	0.0	"
					CL		
					TOTAL DEPTH 16.0 FT.		
				20			
				25			
				30			

Field Notes:
First water encountered at 3.5 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.5 ID sample spoon
Soil Description after USCS

Aegis Environmental Consultants

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: MW-2	SHEET 1 OF 1
E.C. Buehrer & Ass. Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: PC Exploration	DRILLING METHOD: 6.5" HSA	
	DRILLER: Carl Boling	DRILLING RIG: Mobile B 53	
LAND OWNER: E.C. Buehrer & Ass. Inc.	START DATE: 4/25/90 TIME: 10:30 HRS	COMPLETED: 4/25/90 TIME: 13:00 HRS	

STAMPLE	SNAMPLER	BCLOWNTS	SIAMPVLAL	DEPTH (ft.)	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
				0	Surface: concrete		
ctg * SS	MW2 /A	4 4 6	3.0 to 4.5		Clay: dark brown, soft, moist. CH Clay: black, organic, smooth, wet. OH	0	NO PETROLEUM ODOR
				5		0	"
SS	MW2 /B	4 4 4	10.0 to 11.5	10	Clay: black, organic, wet, some gravel. OH	0	"
SS	MW2 /C	12 32 36	15.0 to 16.5	15	Gravelly Clay: brown, stiff, moist CL	0	"
				20	TOTAL DEPTH 17.0 FT.		
				25			
				30			

Field Notes:
First water encountered at 3.5 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.5" ID sample spoon
Soil Description after USCS

Aegis Environmental Consultants

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: MW-3	SHEET 1 OF 1
E.C. Buehrer & Ass. Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: PC Exploration	DRILLING METHOD: 6.5" HSA	
	DRILLER: Carl Boling	DRILLING RIG: Mobile B 53	
LAND OWNER: E.C. Buehrer & Ass. Inc.	START DATE: 4/26/90 TIME: 8:00 HRS	COMPLETED: 4/26/90 TIME: 10:30 HRS	

STAMPLE	SNAMPLER	BCLOWS	SIAMPLE	DEPTH (ft.)	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
				0	Surface: concrete		
* SS	MW3 /A	4 3 3	3.0 TO 4.5		Clay: brown/black, some gravel nails, leaves, glass, wet. OH/CL	2.0	NO PETROLEUM ODOR
				5			
SS	MW3 /B	4 5 6	10.0 TO 11.5	10	Clay: black, organic, tight, wet. OH	2.0	"
SS	MW3 /C	6 21	15.0 TO 16.5	15	Clay: dark brown, gravelly, sandy, moist.	0	"
					TOTAL DEPTH 15.0 FT.		
				20			
				25			
				30			

Field Notes:
First water at 4 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.5" ID sample spoon
Soil Description after USCS

Aegis Environmental Consultants

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: MW-4	SHEET 1 OF 1
E.C. Buehrer & Ass. Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: PC Exploration	DRILLING METHOD: 6.5" HSA	
	DRILLER: Carl Boling	DRILLING RIG: Mobile B 53	
LAND OWNER: E.C. Buehrer & Ass. Inc.	START DATE: TIME: 11:30 HRS	COMPLETED: 4/26/90 TIME: 14:25 HRS	

STAMPLE	SNAMPLER	BCLOWNTS	SIAMPLE	DEPTH (ft.)	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
				0	Surface: concrete		
* SS	MW4 /T	4 4 3	0 to 1.5		Clay: black, moist, fill, gravel, junk. CL	50	MODERATE PETROLEUM ODOR
SS	MW4 /A	3 4 4	5.0 to 6.5	5	Clay: black, organic, smooth, soft, wet. OH	70	MODERATE PETROLEUM ODOR
SS	MW4 /B	NA	10.0 to 11.5	10	Clay: black, organic, smooth, firm, wet. OH	2	NO PETROLEUM ODOR
SS	MW4 /C	NA	15.0 to 16.5	15	Clay: brown, gravelly, some sand sections, moist. CL	0	"
				20	TOTAL DEPTH 16.0 FT.		
				25			
				30			

Field Notes:
First water encountered at 3.5 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.5" ID sample spoon
Soil Description after USCS

Aegis Environmental Consultants

Logged By: L.Braybrooks

APPENDIX C

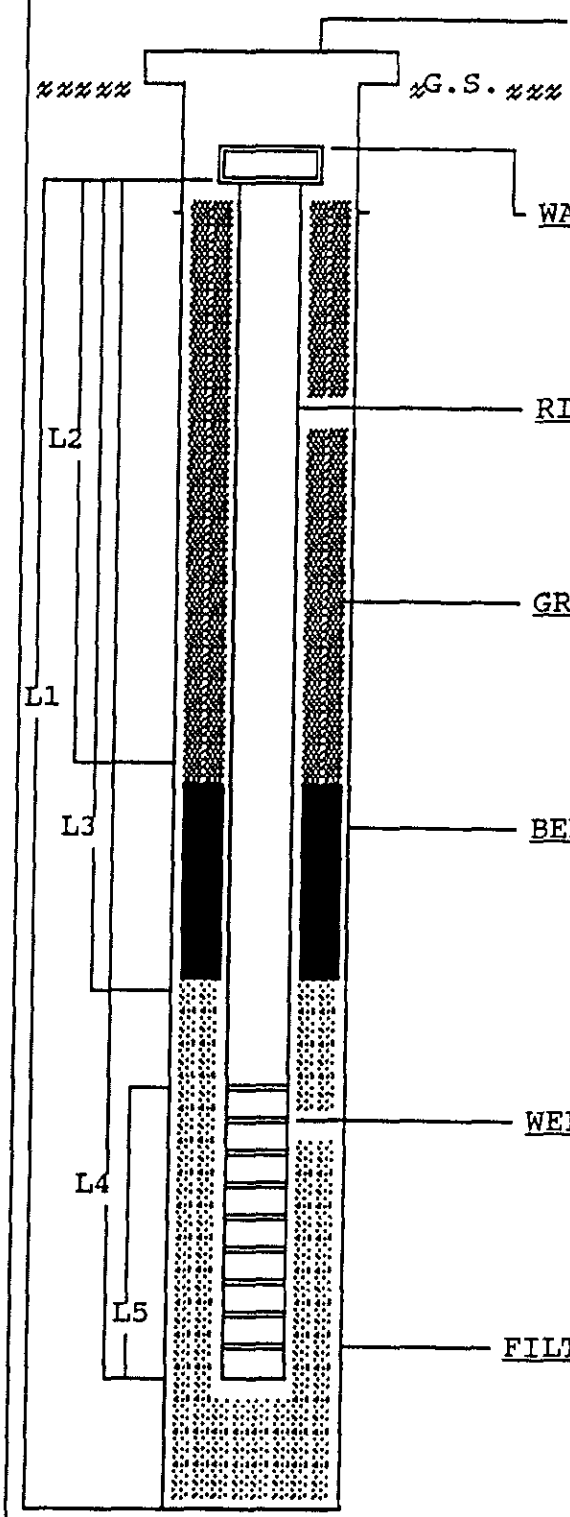
Monitoring Well Construction Details

MONITORING WELL CONSTRUCTION DETAILS

E.C. Buehrer

PROJECT: 1061 Eastshore Hwy. Albany, CA. DATE : 4/25/90

PROJECT NO.: 90-007 WELL NO.: 2



CHRISTY BOX
- Diameter: 12 in.
- Type (flush/above): flush
- Entry Tool : 6.5 " HSA
- Length Above Ground: .50 in.

WATER PROOF LOCKING CAP
- Type: Geostore
- Lock Cap: yes/expanding

RISER MATERIAL
- Type Material: PVC
- Diameter: 4 in.
- Joint Type: flush threaded

GROUT SEAL
- Material Mix: Portland cmnt.
- Total Depth From Surface: 8.0 in.
- Total Thickness: 8.0 in.

BENTONITE SEAL
- Type: pellets
- Size: 1/4 in.
- Total Thickness: 1.13 ft.

WELL SCREEN
- Type Material: PVC
- Diameter: 4 in.
- Joint Type: flush threaded
- Slot Size: 0.02
- Total Length: 12.8 ft.
- Depth to Bottom: 15 ft.

FILTER PACK
- Type Material: 16/40 sand
- Total Thickness: 13.2 ft.
- Depth to Bottom: 15.0 ft.
- Distance Above Screen: 0.4 ft.

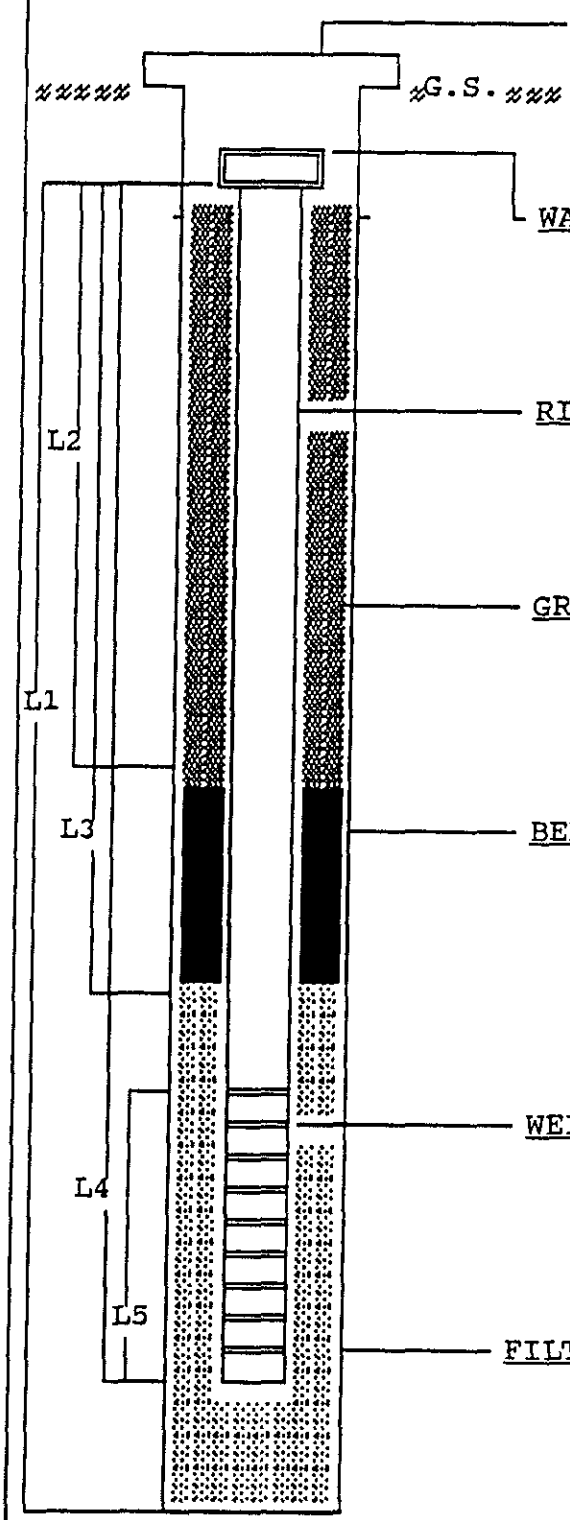
- L1 17.0 ft.
- L2 8 in.
- L3 1.8 ft.
- L4 15.0 ft.
- L5 12.8 ft.

- TOTAL DEPTH OF WELL: 15.0 ft.
- TOTAL DEPTH OF BORING: 17.0 ft.
- DIAMETER OF BORING: 6.5 in.
- METHOD OF DRILLING: hollow stem aug
- DATE STARTED: 4/25/90
- DATE COMPLETED: 4/25/90

MONITORING WELL CONSTRUCTION DETAILS

E.C. Buehrer
PROJECT: 1061 Eastshore Hwy. Albany, CA. DATE : 4/25/90

PROJECT NO.: 90-007 WELL NO.: 4



CHRISTY BOX
Diameter: 12 in.
Type (flush/above): flush
Entry Tool : 6.5 " HSA
Length Above Ground: .05 in.

WATER PROOF LOCKING CAP
Type: Geostore
Lock Cap: yes/expanding

RISER MATERIAL
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded

GROUT SEAL
Material Mix: Portland cmnt.
Total Depth From Surface: 1.0 ft.
Total Thickness: 1.0 ft.

BENTONITE SEAL
Type: pellets
Size: 1/4 in.
Total Thickness: 1.0 ft.

WELL SCREEN
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded
Slot Size: 0.02
Total Length: 11.0 ft.
Depth to Bottom: 13.5 ft.

FILTER PACK
Type Material: 16/40 sand
Total Thickness: 11.5 ft.
Depth to Bottom: 13.5 ft.
Distance Above Screen: 0.5 ft.

L1 15.0 ft.
L2 1.0 ft.
L3 2.0 ft.
L4 13.5 ft.
L5 11.0 ft.

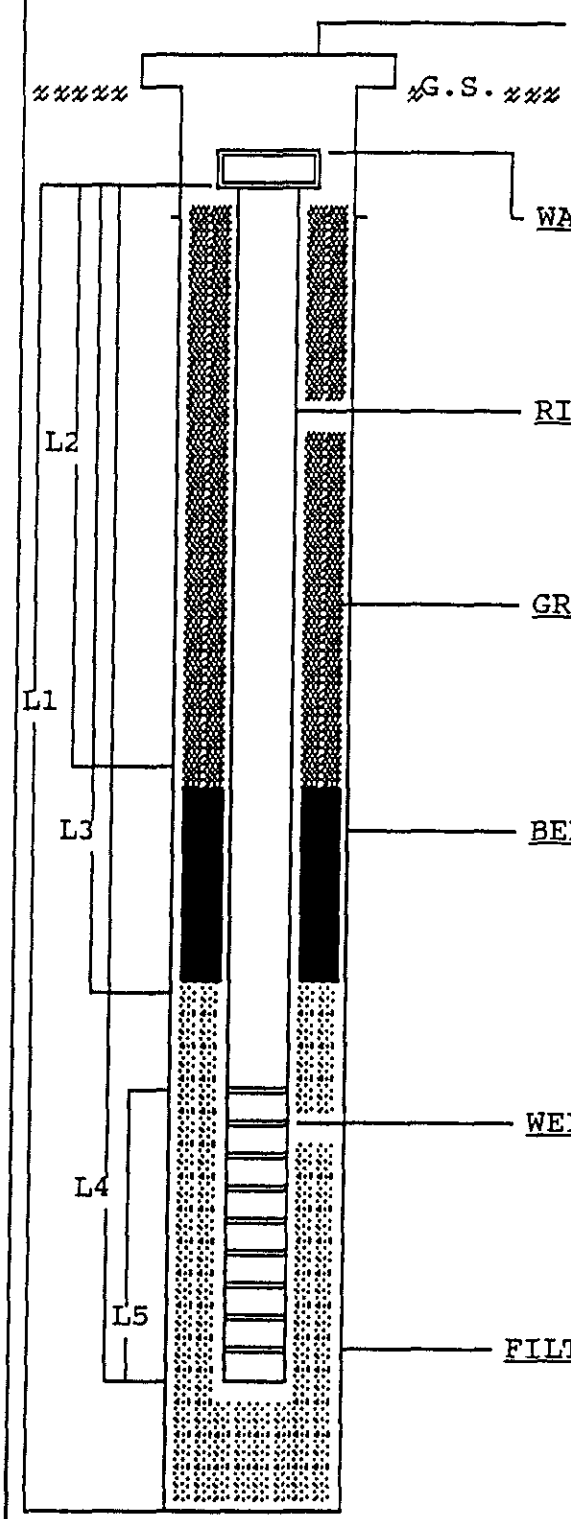
TOTAL DEPTH OF WELL: 13.5 ft.
TOTAL DEPTH OF BORING: 15.0 ft.
DIAMETER OF BORING: 6.5 in.
METHOD OF DRILLING: hollow stem aug
DATE STARTED: 4/26/90
DATE COMPLETED: 4/26/90

MONITORING WELL CONSTRUCTION DETAILS

E.C. Buehrer

PROJECT: 1061 Eastshore Hwy. Albany, CA. DATE : 4/25/90

PROJECT NO.: 90-007 WELL NO.: 1



CHRISTY BOX
Diameter: 12 in.
Type (flush/above): flush
Entry Tool : 6.5 " HSA
Length Above Ground: .05 in.

WATER PROOF LOCKING CAP
Type: Geostore
Lock Cap: yes/expanding

RISER MATERIAL
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded

GROUT SEAL
Material Mix: Portland cmnt.
Total Depth From Surface: 1.0 ft.
Total Thickness: 1.0 ft.

BENTONITE SEAL
Type: pellets
Size: 1/4 in.
Total Thickness: 1.0 ft.

WELL SCREEN
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded
Slot Size: 0.02
Total Length: 11.5 ft.
Depth to Bottom: 14 ft.

FILTER PACK
Type Material: 16/40 sand
Total Thickness: 12.0 ft.
Depth to Bottom: 14.0 ft.
Distance Above Screen: 0.5 ft.

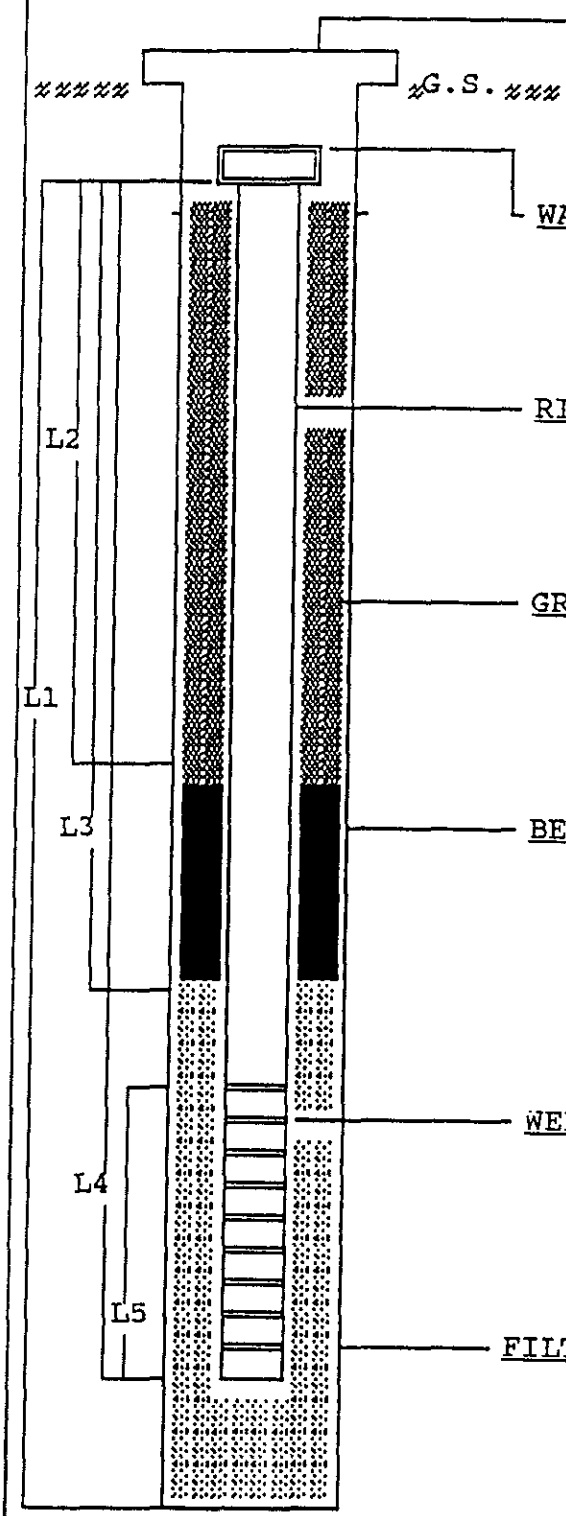
L1 15.0 ft.
L2 1.0 ft.
L3 2.0 ft.
L4 14.0 ft.
L5 11.5 ft.

TOTAL DEPTH OF WELL: 14.0 ft.
TOTAL DEPTH OF BORING: 15.0 ft.
DIAMETER OF BORING: 6.5 in.
METHOD OF DRILLING: hollow stem aug
DATE STARTED: 4/25/90
DATE COMPLETED: 4/25/90

MONITORING WELL CONSTRUCTION DETAILS

E.C. Buehrer
PROJECT: 1061 Eastshore Hwy. Albany, CA. DATE : 4/25/90

PROJECT NO.: 90-007 WELL NO.: 3



CHRISTY BOX
Diameter: 12 in.
Type (flush/above): flush
Entry Tool : 6.5 " HSA
Length Above Ground: .50 in.

WATER PROOF LOCKING CAP
Type: Geostore
Lock Cap: yes/expanding

RISER MATERIAL
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded

GROUT SEAL
Material Mix: Portland cmnt.
Total Depth From Surface: 1.0 ft.
Total Thickness: 1.0 ft.

BENTONITE SEAL
Type: pellets
Size: 1/4 in.
Total Thickness: 1.0 ft.

WELL SCREEN
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded
Slot Size: 0.02
Total Length: 11.0 ft.
Depth to Bottom: 13.5 ft.

FILTER PACK
Type Material: 16/40sand
Total Thickness: 11.5 ft.
Depth to Bottom: 13.5 ft.
Distance Above Screen: 0.5 ft.

L1 15.0 ft.
L2 1.0 ft.
L3 2.0 ft.
L4 13.5 ft.
L5 11.0 ft.

TOTAL DEPTH OF WELL: 13.5 ft.
TOTAL DEPTH OF BORING: 15.0 ft.
DIAMETER OF BORING: 6.5 in.
METHOD OF DRILLING: hollow stem aug
DATE STARTED: 4/26/90
DATE COMPLETED: 4/26/90

APPENDIX D

Certified Analytical Data

ATTACHMENT 4

PROBLEM ASSESSMENT REPORT
August 1, 1991

PROBLEM ASSESSMENT REPORT

E. C. Buehrer & Associates, Inc.
1061 Eastshore Highway
Albany, California

Aegis Project No. 90-007

August 1, 1991

Prepared By:
AEGIS ENVIRONMENTAL, INC.
1050 Melody Lane, Suite 160
Roseville, California 95678
(916) 782-2110

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

This report presents the results of subsurface investigative activities performed by Aegis Environmental, Inc. (Aegis), at 1061 Eastshore Highway in Albany (Alameda County), California (Figure 1). This work comprises the problem assessment phase of investigation at the site.

1.1 Purpose

The purpose of the investigation was to:

- Define the lateral and vertical extent of petroleum hydrocarbons in soil beneath the site.
- Install additional monitoring wells to delineate the plume of dissolved hydrocarbons in groundwater beneath the site.

1.2 Scope

The investigative scope of work is summarized below. The work was performed upon approval by the Alameda County Environmental Health Department (ACEHD) of Aegis' Phase II Hydrogeologic Assessment Work Plan (amended March 11, 1991). All work was performed in accordance with Aegis' standard operating procedures (SOPs) included in Appendix A.

- On April 2 and 3, 1991, nine soil borings were drilled to depths between 3 and 14 feet below the site surface, using hollow-stem augers.
- Soil samples were recovered from the borings, logged and classified according to the Unified Soil Classification System.
- Four of the soil borings were converted to 4-inch-diameter groundwater monitoring wells (Figure 2).
- Five of the soil borings were abandoned to the surface with a grout mixture.
- Drill cuttings were placed on plastic sheeting and covered.
- Based on soil classification, gas detector screening, and depth, representative soil samples from each boring were submitted to a state-certified laboratory for analysis of petroleum hydrocarbons.
- The groundwater monitoring wells (wells) were developed on April 5, 1991.

- Water level measurements and groundwater samples were collected from the four new wells, MW-5 through MW-8, on April 8, 1991.
- Water level measurements and groundwater samples were collected from wells MW-1 through MW-4, on May 8, 1991.
- Groundwater samples were submitted to a state-certified laboratory for analysis.
- Wellhead elevations were surveyed on May 3, 1991, by a California-registered land surveyor and referenced to a temporary bench mark.

2.0 BACKGROUND INFORMATION

The following subsections present information regarding site location and description, adjacent land uses, site utilities and site history.

2.1 Site Location

The site is located at 1061 Eastshore Highway in Albany, (Alameda County) California (Figure 1). The site has been occupied by E. C. Buehrer, Inc., for several years.

2.2 Site Description

The site facilities consist of two buildings (Figure 2). The large building along the western boundary of the site contains office space (about 25 percent) and work bays for equipment repair (about 75 percent). The small building along the southern boundary of the site is utilized as a welding and machine shop, and a spray painting booth. The site is constructed on fill material consisting of bay muds.

2.3 Adjacent Land Uses

The site is located in an industrial area of Albany, California, near the Berkeley City limits. Adjacent to the site's eastern boundary, is an open area that formerly accommodated an Alcan Aluminum Metals Plant. To the north exists an irrigation and plumbing supply business, to the south is a diesel-engine service and repair shop. Eastshore Highway is located to the west of the site, parallel to Interstate Highway 80.

2.4 Utilities

Underground utilities at the site were located prior to conducting a previous phase of work. Three underground utility structures are located on the site. A storm sewer system runs north-south the length of the site in the driveway area east of the main building. A natural gas line runs north-south along the east edge of the property boundary within 2 feet of a chain-link fence. A City sanitary sewer main runs north-south the length of the site immediately east of the storm sewer system (Figure 2).

2.5 Site History

In December 1987, a 300-gallon underground storage tank (UST) containing waste oil reportedly failed a precision tank test. The failed test, in part, prompted a decision to remove the waste-oil tank. On February 18, 1988, the single-wall, steel waste-oil tank and a 1000-gallon, single-wall, steel UST containing gasoline were excavated and removed from the site. The tanks were removed by Willis Brothers Excavating, of Pacheco, California. According to file documents, the 1,000-gallon gasoline storage tank had not been in use for the previous 2 to 3 years. A 1,000-gallon single-wall, steel UST containing gasoline is still in use at the site (Figure 2).

Subsequent to the removal of the two UST, the ACEHD requested submittal of a workplan to address a groundwater assessment. The site operators contacted Hageman-Shank, Inc., of San Ramon, California, to provide a workplan (Proposal For Subsurface Investigation, Hageman-Shank, Inc., November 16, 1989). Their workplan included the results of laboratory analysis performed on aqueous samples collected from the tank pits. One liquid sample from each tank pit was collected by Ivan Vegvary, P.E., L.S., and submitted to Trace Analysis Laboratory, Inc., of Hayward, California, for analysis. As a consequence of the high groundwater table beneath the site, liquid samples were collected in lieu of soil samples.

Liquid sample analysis revealed nonpolar oil & grease by Standard Method 503 E was present in the waste-oil tank excavation sample (B) at 17.0 parts-per-million (ppm). Analysis of Sample B by EPA Method 8020 detected benzene at 0.10 ppm. Analysis of Sample B by EPA Method 8010 revealed the following concentrations of halogenated volatile organics: trans-1,2-dichloroethylene (0.0065 ppm), dichloromethane (0.010 ppm), 1,1,2,2-tetrachloroethane, 1,1,1-trichloroethane (0.028 ppm), and 1,1-dichloroethane (0.018 ppm). Total petroleum hydrocarbons (TPH), as gasoline, and benzene were present in the gasoline tank pit sample at 2.0 and 0.18 ppm, respectively.

The scope of work detailed in the Hageman-Shank, Inc., workplan was modified to include an additional well when the project was assigned to Aegis. In April of 1990, Aegis drilled and installed four wells at the site. The locations of the existing wells are shown on Figure 2. The results of that work are presented in the Hydrogeological Investigation Results Report (Aegis, June 12, 1990).

3.0 PROJECT RESULTS

The following sections present the results of the additional subsurface assessment to further define the lateral and vertical extent of petroleum hydrocarbons in soil and groundwater. The work consisted of drilling nine soil borings, four of which were converted to groundwater monitoring wells (MW-5 through MW-8).

The analytical sampling plan for the range of compounds tested in soil and groundwater was determined in advance and verbally approved by the ACEHD on March 26, 1991.

3.1 Soil Borings

The nine soil borings were drilled, sampled and logged, and the wells installed on April 2 and 3, 1991, according to the SOPs included in Appendix A. The four well borings were advanced to depths of about 11 to 14 feet below grade. The five soil borings were advanced to depths of three to 4 feet below grade. All soil samples were collected from the vadose zone within the first 4 feet of boring depth.

3.2 Soil Conditions

Soil types encountered across the site consist mainly of silty clays with course angular gravel. A black, expansive clay (bay mud) also exists across the site at approximately 5 feet below grade. Boring logs are included in Appendix B. Soil types encountered in soil borings SB-1 and SB-2, and well borings MW-6 and MW-7, near the eastern boundary of the site, include a thin sandy horizon at a depth of approximately 3 feet. Material such as glass, leaves, and metal were occasionally encountered at various depths across the site, indicating fill. The depth of fill material varied across the site, from about 5 to 10 feet below grade.

3.3 Soil Boring Sample Analytical Results

Ten soil samples from the nine soil borings were submitted to a state-certified laboratory for analysis. Sample shipment and handling were documented with completed chain-of-custody forms. Analytical methods included EPA Method 9071 for total oil & grease, Standard Method 5520E&F for nonpolar oil & grease, Standard Method GC FID/3550 for TPH as diesel and motor oil, Method 8020 for benzene, toluene, ethylbenzene, and xylenes (BTEX), Standard Method GC FID/5030 for TPH as gasoline and mineral spirits, Method 8010 for halogenated volatile organics, and Method 8080 for polychlorinated biphenyls (PCBs). Soil boring sample analytical results are presented in Table 1, except for halogenated volatile organics, which were not detected at the quantitative reporting limits and PCBs. The PCB Aroclor 1260 was detected in soil sample SB2-B at 66 ppb. As indicated in the soil sample analytical laboratory reports (Appendix C), concentrations of halogenated volatile organics were not present at or above the detection limits.

Laboratory analysis for PCBs was performed on three soil samples from soil borings SB-1 and SB-2. Soil sample SB2-B, collected from a depth of about 2 feet below surface grade, contained the PCB Aroclor 1260 at 66 ppb. These samples were analyzed for PCBs to evaluate the presence of PCB compounds in the vicinity of the former location of an electrical transformer. The transformer was located on Southern Pacific Transportation Company property adjoining the eastern site boundary (Figure 2).

Soil boring samples SB1-C, SB2-B, and SB2-C were analyzed for TPH as mineral spirits. None was detected at the quantitative reporting limit of 10.0 parts-per-million (ppm). These samples were analyzed for TPH as mineral spirits to evaluate the presence of this hydrocarbon in soil in the area of the site bordering the former Alcan Aluminum Company Plant. According to file documents, the Alcan site has been involved with remediation of mineral spirits released from underground tanks formerly located on the Alcan site.

The results of laboratory analysis of soil samples revealed a concentration of 3.0 ppm of TPH as gasoline in soil boring sample SB4-C. Sample SB4-C was the only soil sample to contain concentrations of BTEX above the detection limit of 0.005 ppm (Table 1). Total petroleum hydrocarbons as diesel were not detected in any of the soil samples. Concentrations of TPH as motor oil ranged from 27 ppm in soil sample MW6-B to 280 ppm in sample SB2-B. Concentrations of total oil & grease ranged from 2,400 ppm in soil sample SB4-C to 73 ppm in sample MW6-B. Figure 3 presents the concentrations of oil & grease in soil samples from across the site. Figures 4 and 5 present the concentrations of TPH as motor oil and TPH as gasoline and diesel in soil samples across the site, respectively.

3.4 Monitoring Well Installation, Development, and Sampling

The four well borings were drilled with 10-inch-diameter hollow-stem augers to depths ranging from 11-½ to 14 feet below the site surface. The well locations are shown on Figure 2. The wells were installed, developed and sampled according to the SOPs included in Appendix A. The wells were set with 4-inch-diameter, Schedule 40 PVC pipe with flush-threaded joints. Monitoring well construction details are included in Appendix D. The wells were developed on April 5, 1991.

Groundwater samples were collected from the four new wells MW-5 through MW-8 on April 8, 1991, using Voss SingleSample^{tm} disposable bailers. Groundwater samples were collected from wells MW-1 through MW-4 on May 8, 1991.

3.5 Groundwater Conditions

Groundwater elevations were determined using water level data collected on May 8, 1991 (Table 4). The groundwater elevations were used to prepare the groundwater elevation contour map included as Figure 8. Water level data indicate that the groundwater flow is in a general westerly direction, from the Berkeley Hills toward San Francisco Bay. However, some localized mounds and depressions appear to exist around wells MW-5

and MW-2. Groundwater flow direction may be affected by tidal influences and subsurface obstructions such as building foundations. Depth to groundwater varies from 1 to 3 feet below grade, across the site. The groundwater gradient beneath the site is approximately 0.01 ft/ft.

3.6 Groundwater Sample Analyses

Groundwater samples were submitted for analysis to National Environmental Testing (NET) Pacific, Inc. Sample shipment and handling were documented with completed chain-of-custody forms. Groundwater samples were collected from wells MW-5 through MW-8 on April 8, 1991. Groundwater samples were collected from wells MW-1 through MW-4 on May 8, 1991, to maintain the quarterly monitoring schedule. The laboratory analytical results of these two sampling events are summarized in Table 2. The results of laboratory analysis performed on groundwater samples collected on February 8, 1991, from wells MW-1 through MW-4 are summarized in Table 3 for comparison.

Laboratory analytical methods used in the analysis of groundwater samples included Standard Method GC FID/5030 for TPH as gasoline and mineral spirits, Method 602 for BTEX, Standard Method GC FID/3510 for TPH as diesel and motor oil, EPA Method 9070 for total oil & grease, Standard Method 5520BF for nonpolar oil & grease, and Method 8010 for halogenated volatile organics. Groundwater analytical laboratory reports are included in Appendix E.

4.0 SUMMARY OF FINDINGS

The following subsections summarize the results of the investigation relevant to the extent of petroleum hydrocarbons in soil and groundwater beneath the site.

4.1 Petroleum Hydrocarbons In Soil

Petroleum hydrocarbons were detected in soil samples from each of the nine soil borings. The hydrocarbons detected in the soil samples were predominantly those consisting of heavy, straight-chain hydrocarbon molecules - identified as oil & grease and TPH as motor oil. TPH as mineral spirits and diesel were not detected in any of the soil samples collected during this second phase of investigation (Table 1). TPH as gasoline was detected in only one soil sample during this phase of investigation, SB4-C at 3.0 ppm. Figure 5 illustrates the concentrations of TPH as gasoline and diesel in soil samples from across the site, including analytical results from the initial investigation when wells MW-1 through MW-4 were installed. TPH as diesel and gasoline, and three chlorinated hydrocarbon compounds, on the Method 8010 list of halogenated volatile organics, were detected in soil samples collected during the initial site investigation. No chlorinated hydrocarbons were found in soil samples collected during this second phase of the investigation.

As shown on Figure 3, oil & grease concentrations are highest in the locations of wells MW-2, MW-3, and MW-4, and soil boring SB-4. Well MW-4 is near the oil clarifier system and wells MW-2 and MW-3 and soil boring SB-4 are near the former UST location (Figure 2). Figure 4 presents concentrations TPH as motor oil. Concentrations of TPH as motor oil were highest in soil samples from well MW-4, which is near the oil clarifier system (Figure 2). Concentrations of oil & grease and TPH as motor oil detected in soil samples from other locations, such as soil boring SB-2, may be due to an unknown source. The limits of TPH as diesel and gasoline are defined in three directions. Their extent in soil is not defined off site, to the south.

During the first phase of investigation, the PCB Aroclor 1254 was detected at 300 ppb in soil sample SB-3, collected about 2 feet below the surface. Aroclor 1260 was detected in soil boring sample SB2-B at 66.0 ppb at approximately the same depth during this second phase of investigation (Appendix C). Sample SB-3 was collected directly west of the former location of an electrical transformer, near the fence along the eastern site boundary. Sample SB2-B was collected approximately 80 feet to the north of this location (Figure 2).

4.2 Petroleum Hydrocarbons In Groundwater

Laboratory analysis of groundwater samples collected from wells MW-5 through MW-8 on April 8, 1991, and from wells MW-1 through MW-4 on May 8, 1991, indicate that TPH as gasoline is not present in groundwater at or above the practical quantitative reporting limit of 50 ppb (Table 2). Concentrations of TPH as diesel ranged from 150 to 220 ppb in monitoring wells MW-1 through MW-6. TPH as mineral spirits were detected in groundwater samples from four wells at concentrations up to 150 ppb.

Benzene concentrations in groundwater samples collected on April 8 and May 8, 1991, were detected above the reporting limit in only one monitoring well, MW-3, at 1.0 ppb. The benzene iso-concentration contour map illustrating the results of these two sampling events is presented on Figure 7. Concentrations of benzene in monitoring wells MW-1 through MW-4 sampled on February 8, 1991, were detected in wells MW-1, MW-3, and MW-4 at up to 7.5 ppb (Table 3). A benzene iso-concentration contour map, included as Figure 6, presents the results of the February sampling event.

The presence of TPH as mineral spirits was detected in groundwater samples from wells MW-1, MW-3, MW-4, and MW-6. The presence of TPH as diesel was detected in groundwater samples from all wells except MW-7 and MW-8. The presence of TPH as mineral spirits and diesel fuel may be due to off site sources.

TPH as motor oil were not detected at or above the practical quantitation reporting limit in any of the groundwater samples. Oil & grease (total and nonpolar) were not detected at or above the practical quantitation reporting limit in the aqueous samples analyzed for those hydrocarbons. None of the halogenated volatile organics were detected at or above the practical quantitation reporting limits in groundwater samples analyzed for those compounds listed in the Method 8010 analysis.

4.3 Hydrogeologic Conditions

Groundwater beneath the site is shallow. The depth to groundwater is approximately 3 feet, however during the second phase of investigation in March 1991, groundwater in monitoring well MW-7 was about 6 inches below the site surface when the well was installed. Water was ponded in numerous areas east of the site. The direction of groundwater flow beneath the site is to the west, although some local variations occur (Figure 8).

5.0 REMARKS/SIGNATURES

The interpretations and conclusions contained in this report represent our professional opinions. These opinions are based on currently accepted geological and engineering practices in use at this time and for this specific site. Other than this, no warranty is implied or intended.

AEGIS ENVIRONMENTAL, INC.

This report was prepared by: Larry Braybrooks

Larry Braybrooks
Project Geologist

Date: 8/1/91

This report was reviewed by: Mark A. Richards

Mark A. Richards
Senior Geologist

Date: August 1, 1991

The work described herein was performed under the direct Supervision of a State of California Registered Professional Geologist:

Clarke H. Owen

Clarke H. Owen
Registered Geologist #4987

Date: 8-1-91

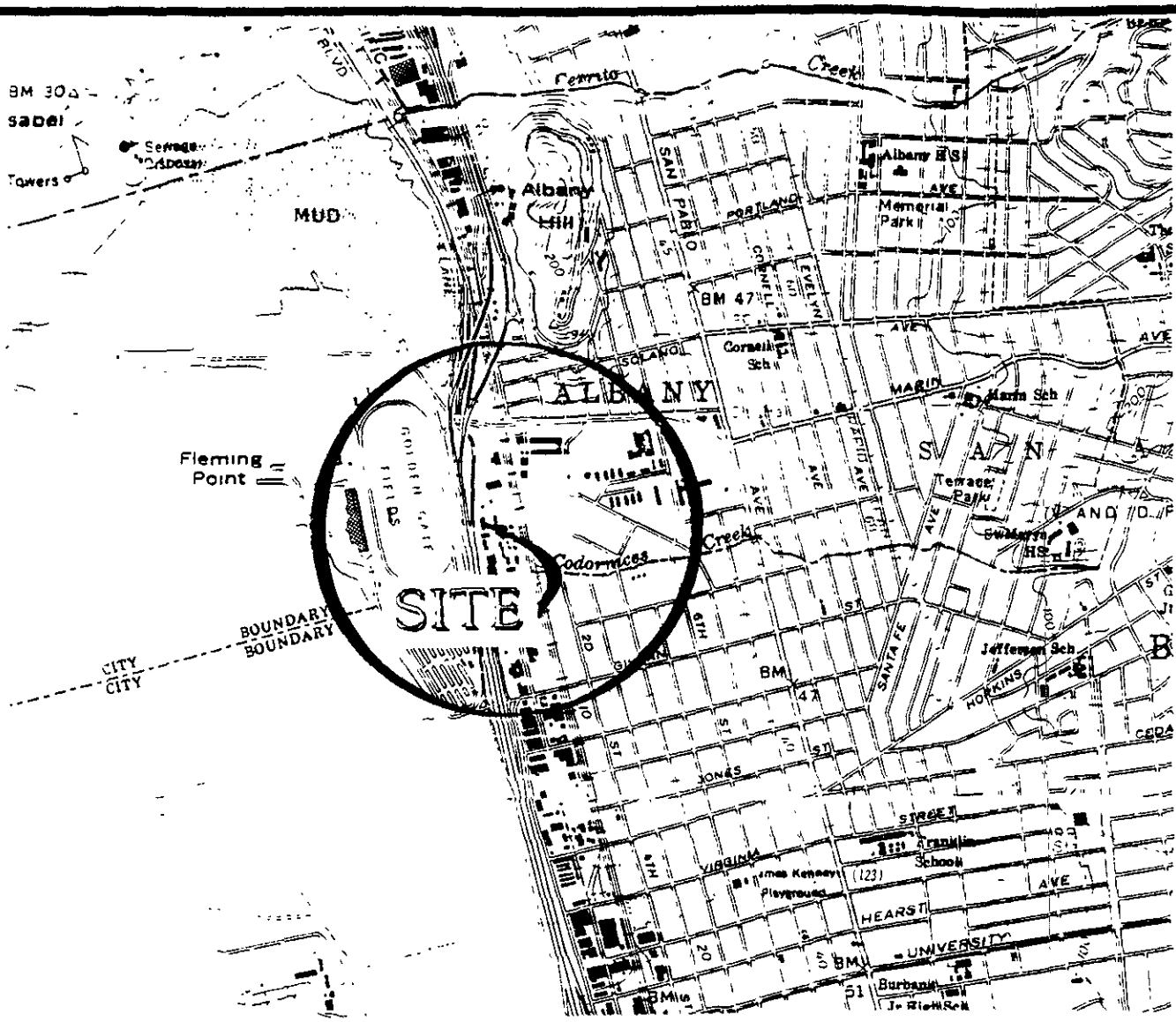
6.0 REFERENCES

"Proposal For Subsurface Investigation," Hageman-Shank, Inc., November 16, 1989.

"Hydrogeological Investigation Results Report," Aegis Environmental, Inc., June 12, 1990.

Regional Board Staff Recommendations - Preliminary Site Investigation, Explanation For Table #2 "Recommended Minimum Verification Analyses For Underground Tank Leaks," October 18, 1989, Revised August 10, 1990.

FIGURES



SCALE: 1"= 2.000'

0 2.000

GENERAL NOTES:

BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC RICHMOND & OAKLAND WEST, CA.

CALIF

FIGURE 1
SITE LOCATION MAP
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway
Albany, Ca.

AEGIS Job Number 90-007

DRAWN BY: Ed Bernard DATE: April 8,1991
REVIEWED BY: L Braybrooks DATE: April 14,1991

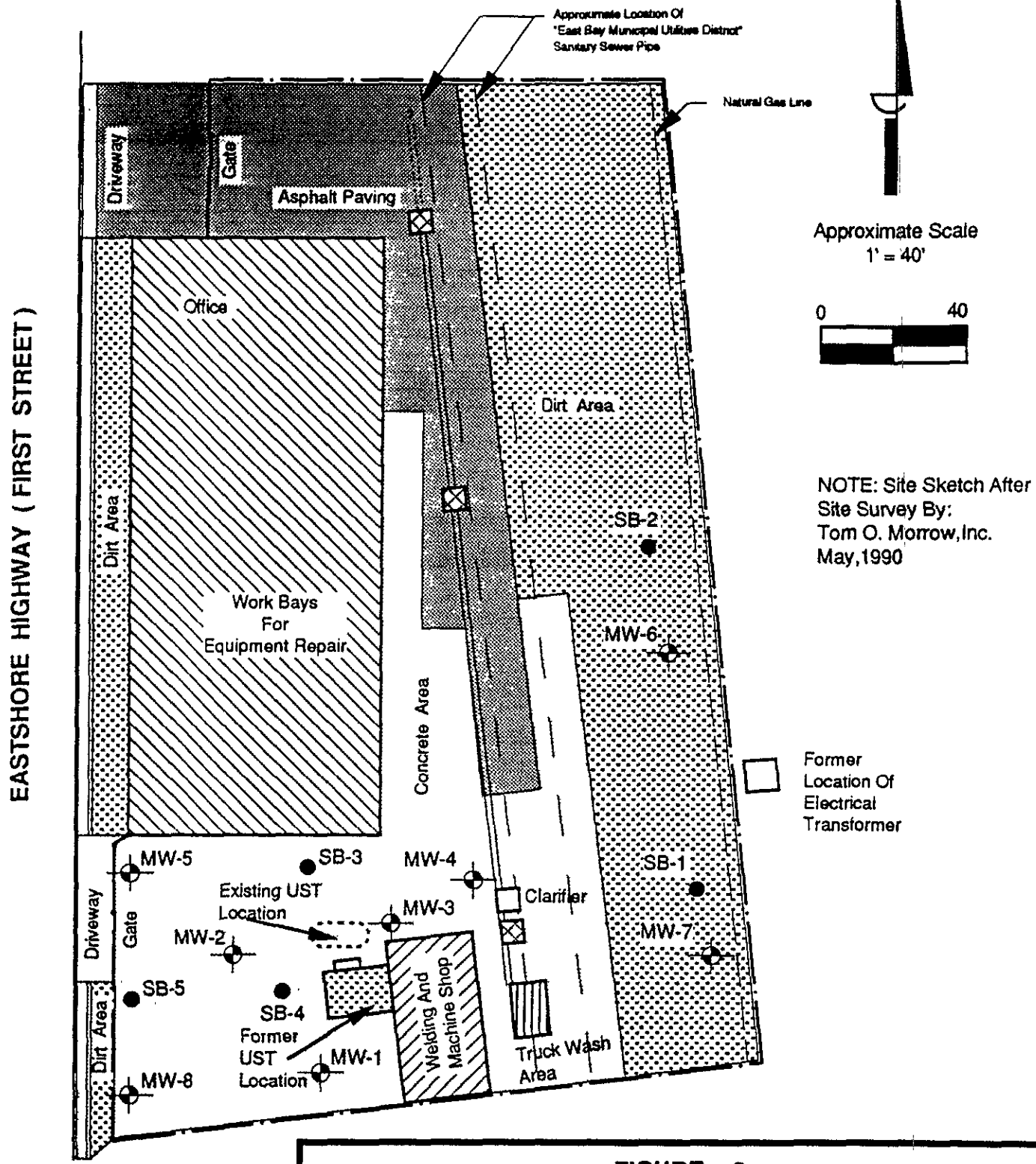
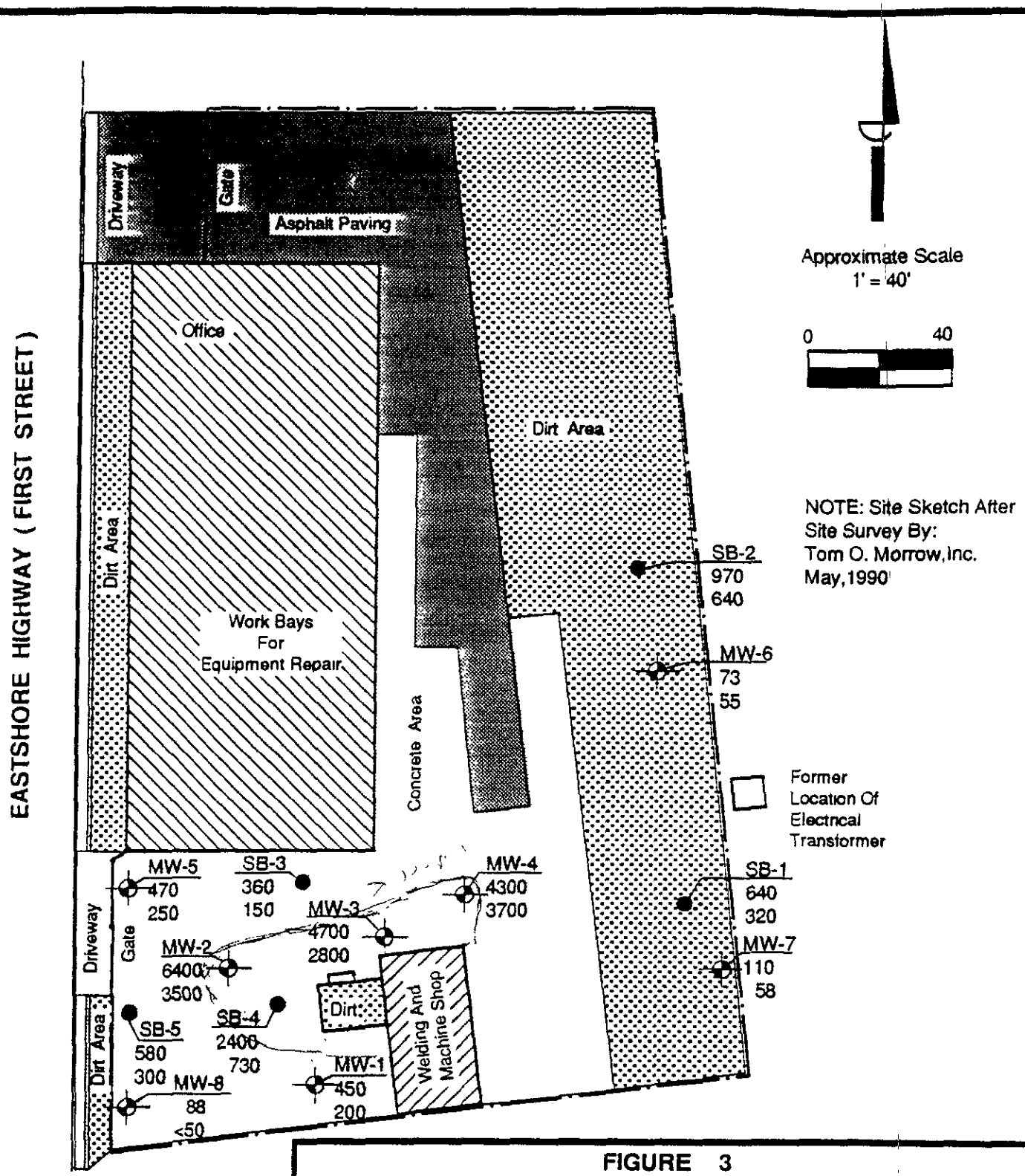


FIGURE 2
SITE MAP
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway
Albany, Ca.

AEGIS Job Number 90 -007

DRAWN BY: Ed Bernard DATE: April 8,1991
REVIEWED BY: L Braybrooks DATE: April 14,1991



LEGEND

Monitoring Well

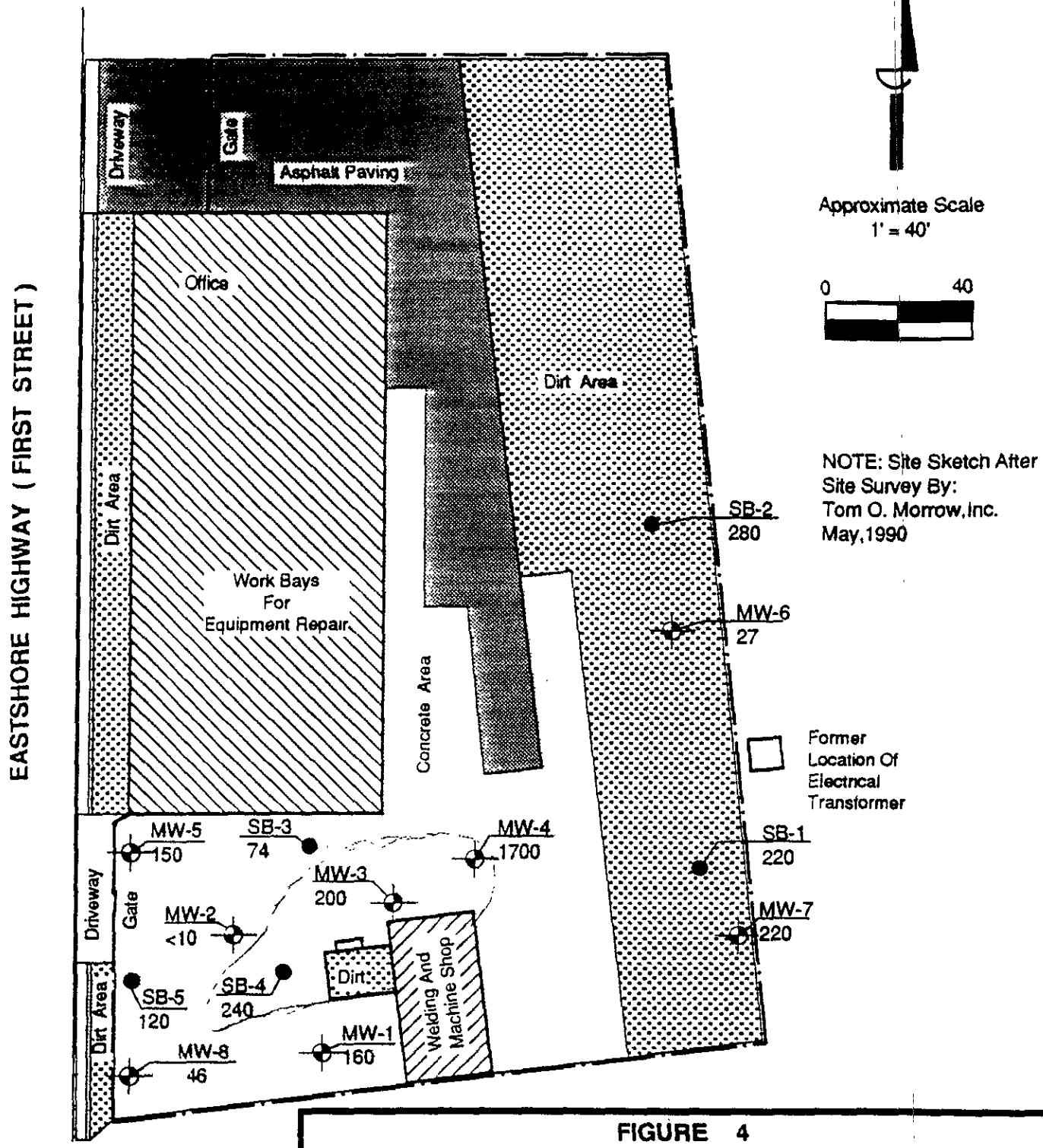
SB-5 Soil Boring
580 Total Oil & Grease
300 Non-Polar Oil & Grease

NOTE: Analytical Results reported in ppm.
(Parts Per Million)

FIGURE 3
CONCENTRATIONS OF OIL AND GREASE IN SOIL (ppm)
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway
Albany, Ca.

AEGIS Job Number 90 -007

DRAWN BY: Ed Bernard DATE:May 29,1991
REVIEWED BY: L Braybrooks DATE:May 29,1991



LEGEND

Monitoring Well

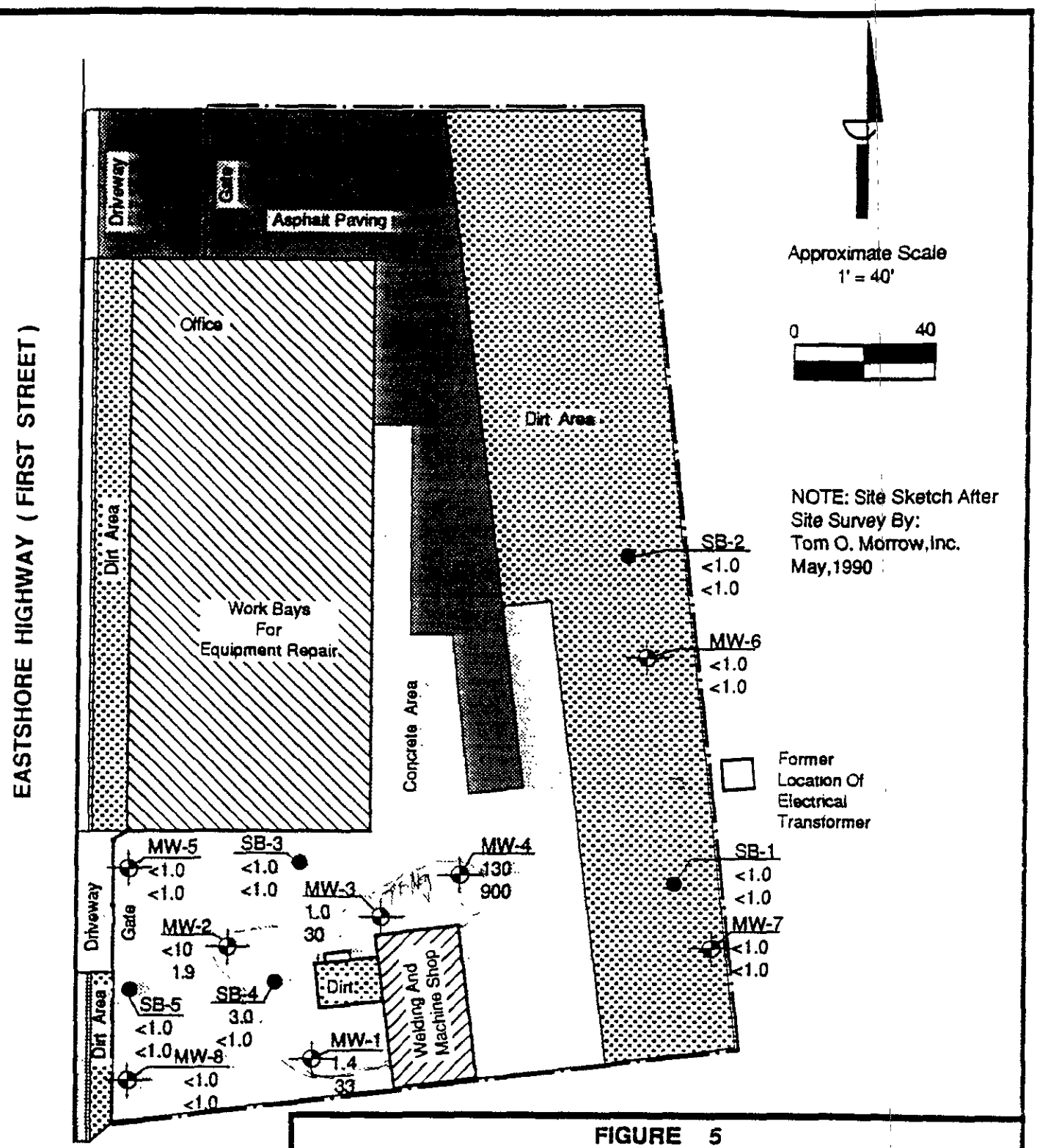
SB-5
120
Soil Boring
Motor Oil Concentration In ppm In Soil

NOTE: Analytical Results reported in ppm.
(Parts Per Million)

FIGURE 4
CONCENTRATIONS OF TPH AS MOTOR OIL IN SOIL (ppm)
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway
Albany, Ca.

AEGIS Job Number 90 -007

DRAWN BY: Ed Bernard DATE:May 29,1991
REVIEWED BY: L Braybrooks DATE:May 29,1991



LEGEND

Monitoring Well

SB-5 Soil Boring

<1.0 TPH As Gasoline

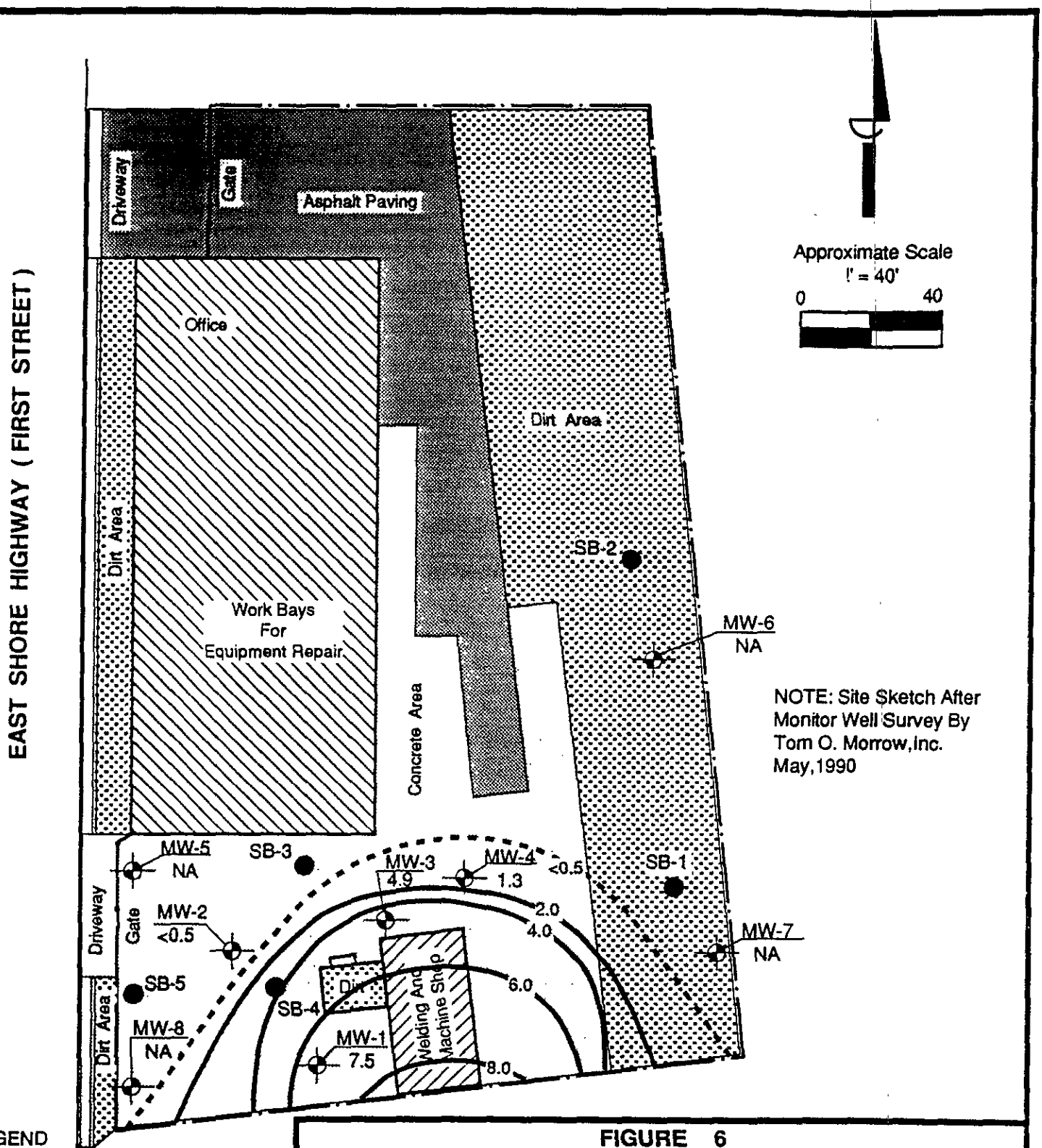
<1.0 TPH As Diesel

NOTE: Analytical Results reported in ppm. (Parts Per Million)

FIGURE 5
CONCENTRATIONS OF TPH AS GASOLINE & DIESEL IN SOIL (ppm)
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway
Albany, Ca.

AEGIS Job Number 90 -007

DRAWN BY: Ed Bernard DATE:May 29,1991
REVIEWED BY: L Braybrooks DATE:May 29,1991



LEGEND

- Monitoring Well
- MW-1 / 7.5 — Benzene Concentration In Groundwater Sample (ppb)
- Soil Boring
- NA — Not Available For This Date
- 6.0 — Benzene Iso-Concentration Contour Line

FIGURE 6
BENZENE ISO-CONCENTRATION CONTOUR MAP
FEBRUARY 26, 1991
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway
Albany, Ca.

AEGIS Job Number 90 -007

DRAWN BY: Dennis Hada **DATE:** June 20,1991

REVIEWED BY: **DATE:**

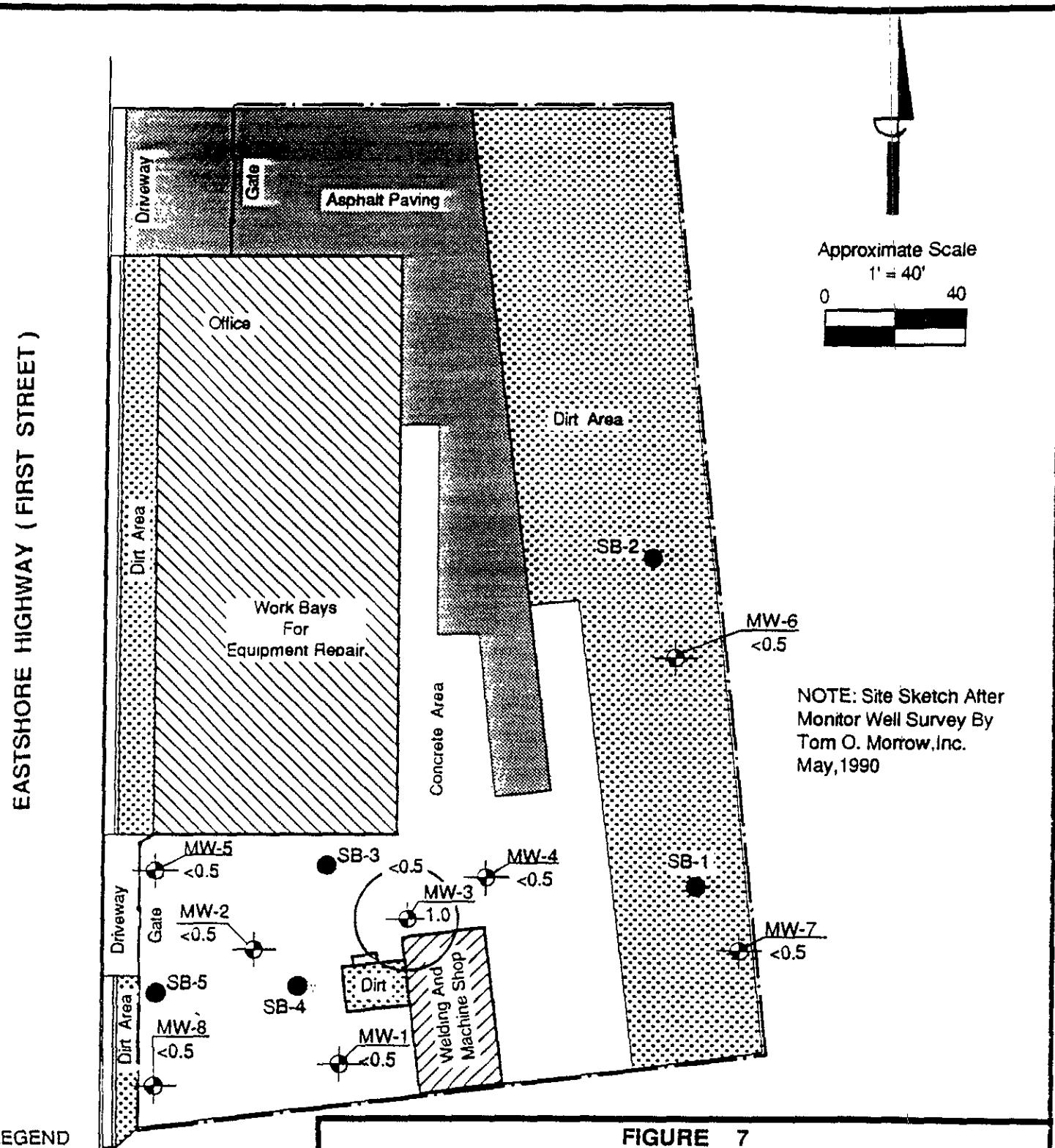
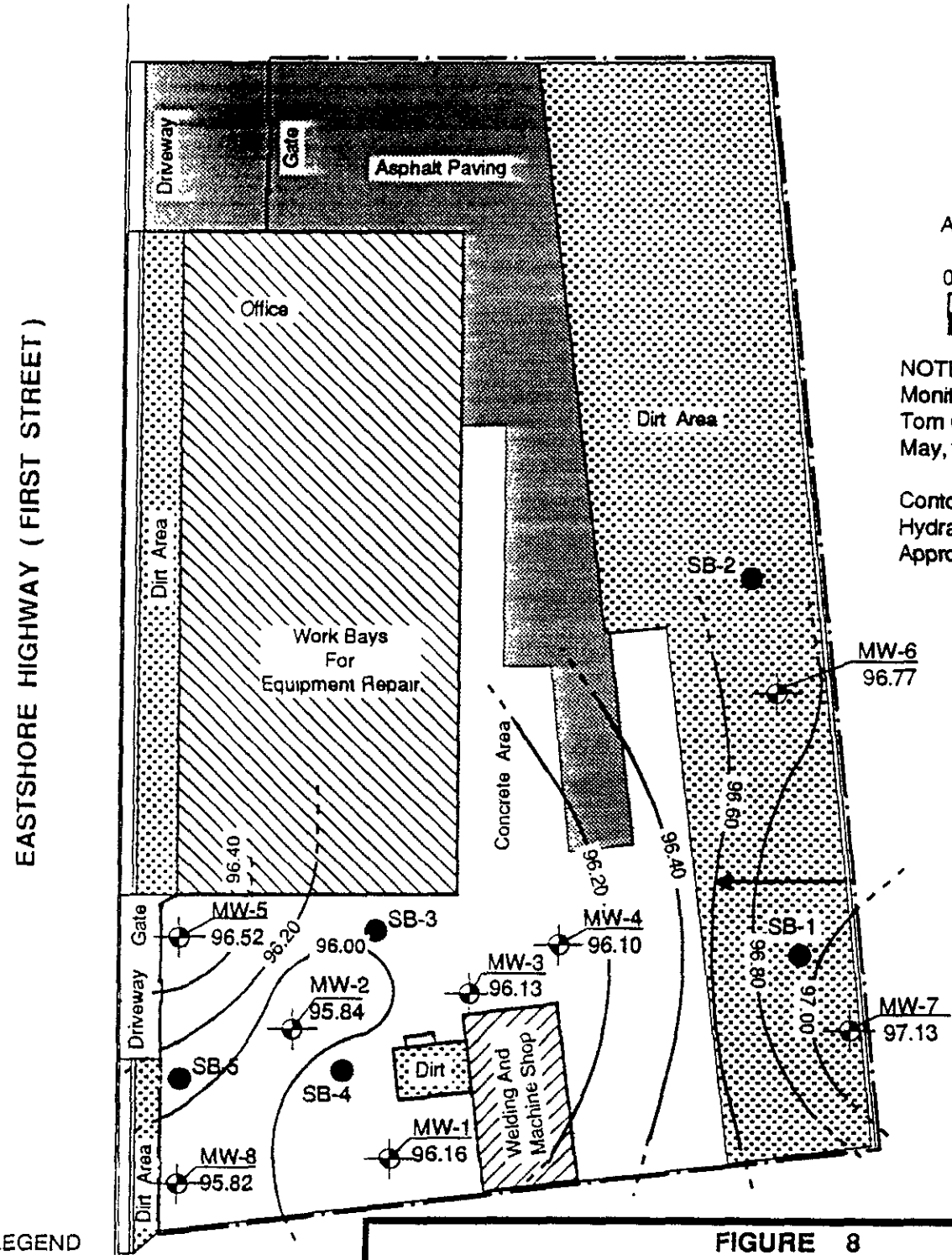


FIGURE 7
BENZENE ISO-CONCENTRATION CONTOUR MAP
APRIL 8, MAY 8,1991
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway
Albany, Ca.

AEGIS Job Number 90 -007

DRAWN BY: Ed Bernard **DATE: May 30,1991**
REVIEWED BY: L Braybrooks **DATE: May 31,1991**



LEGEND

- Monitoring Well
- MW-3 / 95.84 — Groundwater Elevation
- Groundwater Elevation Contour Line (Dashed Where Inferred)
- Soil Boring
- Estimated Direction Of Groundwater Flow

FIGURE 8
GROUNDWATER ELEVATION CONTOUR MAP
MAY 8,1991
E. C. Buehrer Associates, Inc.
1061 Eastshore Highway
Albany, Ca.

AEGIS Job Number 90 -007

DRAWN BY: Ed Bernard DATE: May 30,1991
REVIEWED BY: L Braybrooks DATE: May 31,1991

TABLES

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS
E. C. BUEHRER, INC., 1061 EASTSHORE HIGHWAY, ALBANY, CALIFORNIA

Sample ID	TPH-G	TPH-MS	TPH-D	Benzene	Toluene	Ethyl-Benzene	Xylenes	O&G	O&G	TPH-MO
SB1-C	<1.0	<10.0	<1.0	<0.005	<0.005	<0.005	<0.005	640	320	220
SB2-B	<1.0	<10.0	<1.0	<0.005	<0.005	<0.005	<0.005	970	640	280
SB2-C	<1.0	<10.0	<1.0	<0.005	<0.005	<0.005	<0.005	680	370	260
SB3-B	<1.0	NA	<1.0	<0.005	<0.005	<0.005	<0.005	360	150	74
SB4-C	3.0	NA	<1.0	0.012	0.120	0.0052	0.018	2,400	730	240
SB5-B	<1.0	NA	<1.0	<0.005	<0.005	<0.005	<0.005	580	300	120
MW5-B	<1.0	NA	<1.0	<0.005	<0.005	<0.005	<0.005	470	250	150
MW6-B	<1.0	NA	<1.0	<0.005	<0.005	<0.005	<0.005	73	55	27
MW7-A	<1.0	NA	<1.0	<0.005	<0.005	<0.005	<0.005	110	58	220
MW8-A	<1.0	NA	<1.0	<0.005	<0.005	<0.005	<0.005	88	<50	46

NOTES: NA = Not analyzed.
Sample results are presented in parts-per-million.
TPH-G = Total petroleum hydrocarbons (TPH) as gasoline.
TPH-MS = TPH as mineral spirits.
TPH-D = TPH as diesel.
O&G = Oil and grease.
TPH-MO = TPH as motor oil.

Detection limits used in tabulating analytical results follow practical quantitation reporting limits as presented in the Regional Board Staff Recommendations for Investigation of Underground Tanks, except where detection limits are higher due to necessary sample dilution.

TABLE 2

GROUNDWATER SAMPLE ANALYTICAL RESULTS
E. C. BUEHRER, INC., 1061 EASTSHORE HIGHWAY, ALBANY, CALIFORNIA
(FEBRUARY 8, 1991)

Sample ID	TPH-G	TPH-MS	TPH-D	Benzene	Toluene	Ethyl-Benzene	Xylenes	O&G	TPH-MO
MW-1	140	NA	430	7.5	<0.5	0.66	0.70	NA	600
MW-2	<50	NA	480	<0.5	<0.5	<0.5	<0.5	NA	700
MW-3	150	NA	470	4.9	<0.5	<0.5	<0.5	NA	700
MW-4	90	NA	350	1.3	<0.5	<0.5	<0.5	NA	600

NOTES: Sample results are presented in parts-per-billion.
TPH-G = Total petroleum hydrocarbons (TPH) as gasoline.
TPH-MS = TPH as mineral spirits.
TPH-D = TPH as diesel.
O&G = Oil & grease.
TPH-MO = TPH as motor oil.
NA = Not analyzed for that compound.

Detection limits used in tabulating analytical results follow practical quantitation reporting limits as presented in the Regional Board Staff Recommendations for Investigation of Underground Tanks, except where detection limits are higher due to necessary sample dilution.

Analytical results presented in Table 3 represent groundwater samples collected on February 8, 1991.

TABLE 3

GROUNDWATER SAMPLE ANALYTICAL RESULTS
E. C. BUEHRER, INC., 1061 EASTSHORE HIGHWAY, ALBANY, CALIFORNIA
(MAY 8, 1991 AND APRIL 8, 1991)

Sample ID	TPH-G	TPH-MS	TPH-D	Benzene	Toluene	Ethyl-Benzene	Xylenes	O&G	TPH-MO
MW-1	<50	120	180	<0.5	<0.5	<0.5	<0.5	NA	<500
MW-2	<50	<50	220	<0.5	0.6	<0.5	<0.5	NA	<500
MW-3	<50	100	230	1.0	1.0	<0.5	<0.5	NA	<500
MW-4	<50	50	150	<0.5	<0.5	<0.5	<0.5	NA	<500
MW-5	<50	<50	220	<0.5	1.8	0.6	1.0	<5,000	<500
MW-6	<50	150.0	210	<0.5	1.8	0.6	1.0	<5,000	<500
MW-7	<50	<50	<50	<0.5	1.4	<0.5	0.8	<5,000	<500
MW-8	<50	<50	<50	<0.5	1.6	<0.5	1.0	<5,000	<500

NOTES: Sample results are presented in parts-per-billion (ppb).
TPH-G = Total petroleum hydrocarbons as gasoline.
TPH-MS = TPH as mineral spirits.
TPH-D = TPH as diesel.
O&G = Oil & grease (total and nonpolar).
TPH-MO as motor oil.
NA = Not analyzed for that compound.

Detection limits used in tabulating analytical results follow practical quantitation reporting limits as presented in the Regional Board Staff Recommendations for Investigation of Underground Tanks, except where detection limits are higher due to necessary sample dilution.

Analytical results for monitoring wells MW-1 through MW-4 represent groundwater samples collected on May 8, 1991. Analytical results for monitoring wells MW-5 through MW-8 represent groundwater samples collected on April 8, 1991.

TABLE 4

GROUNDWATER ELEVATION DATA
E. C. BUEHRER, INC., 1061 EASTSHORE HIGHWAY, ALBANY, CALIFORNIA

Well ID	Time	Reference Elevation (Feet)	Depth to Groundwater (Feet)	Groundwater Elevation (Feet)	Total Well Depth (Feet)
MW-1	11:15	99.51	3.35	96.16	13.91
MW-2	11:00	99.52	3.68	95.84	14.44
MW-3	11:10	99.60	3.47	96.13	13.41
MW-4	11:05	99.20	3.10	96.10	13.97
MW-5	10:45	99.14	2.62	96.52	11.57
MW-6	10:35	100.76	3.99	96.77	12.15
MW-7	10:30	101.52	4.39	97.13	12.20
MW-8	10:40	99.64	3.82	95.82	11.81

NOTE: Groundwater level measurements were collected on May 8, 1991, using a Slope™ water level indicator.

APPENDIX A

STANDARD OPERATING PROCEDURES

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: SOIL BORING SAMPLING
SOP-1

Soil samples for chemical analysis are collected in thin-walled brass tubes, 4- or 6-inches long by 2-inches outside diameter. Three or four of the tubes, plus a spacer tube, are set in a 2-inch inside diameter 18-inch split-barrel sampler.

Where possible, the split-barrel sampler is driven its entire length either hydraulically or using a 140-pound drop hammer. The sampler is extracted from the borehole and the brass tubes, containing the soil samples, are removed. Upon removal from the sampler, the selected brass tubes are immediately trimmed and capped with either aluminum foil or Teflon sheets and plastic caps. They are then hermetically sealed with duct tape, labeled and refrigerated for delivery, under strict chain-of-custody, to the analytical laboratory. These procedures minimize the potential for cross-contamination and volatilization of volatile organic compounds (VOC) prior to chemical analysis.

One soil sample collected at each sampling interval is analyzed in the field using either a portable photoionization detector (PID), flame ionization detector, organic vapor analyzer, catalytic gas detector or an explosimeter. The purpose of this field analysis is to qualitatively determine the presence or absence of hydrocarbons, and the samples to be analyzed at the laboratory. The soil sample is sealed in either a brass tube, glass jar or plastic bag to allow for some volatilization of VOC. The PID is then used to measure the concentrations of hydrocarbons within the containers's head space. The data is recorded on both field notes and the boring logs at the depth corresponding to the sampling point.

Other soil samples are collected to document the soil and/or stratigraphic profile beneath the project site, and estimate the relative permeability of the subsurface materials. All drilling and sampling equipment are either steam-cleaned or washed in trisodium phosphate solution and double-rinsed in deionized water prior to use at each site and between boreholes to minimize the potential for cross-contamination.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: SOIL CLASSIFICATION
SOP-3

Soil samples are classified according to the Unified Soil Classification System (USCS). Representative portions of the samples may be shipped under strict chain-of-custody to an analytical laboratory for further examination and verification of the in-field classification, and analysis of soil mechanical and/or petrophysical properties. The soil types are indicated on logs of either excavations or borings together with depths corresponding to the sampling points, and other pertinent information.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY PROCEDURES
SOP-4

Sample identification and chain-of-custody procedures ensure sample integrity, and document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis is labeled to identify the job number, date, time of sample collection, a sample number unique to the sample, any in-field measurements made, sampling methodology, name(s) of on site personnel and any other pertinent field observations also recorded on the field excavation or boring log.

Chain-of-custody forms are used to record possession of the sample from time of collection to its arrival at the laboratory. During shipment, the person with custody of the samples will relinquish them to the next person by signing the chain-of-custody form(s) and noting the date and time. The sample-control officer at the laboratory will verify sample integrity, correct preservation, confirm collection in the proper container(s) and ensure adequate volume for analysis.

If these conditions are met, the samples will be assigned unique laboratory log numbers for identification throughout analysis and reporting. The log numbers will be recorded on the chain-of-custody forms and in the legally-required log book maintained in the laboratory. The sample description, date received, client's name and any other relevant information will also be recorded.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: LABORATORY ANALYTICAL QUALITY ASSURANCE AND CONTROL
SOP-5

In addition to routine calibration of the analytical instruments with standards and blanks, the laboratory analyst is required to run duplicates and spikes on 10 percent of the analyses to insure an added measure of precision and accuracy. Accuracy is also verified through the following:

1. U.S. Environmental Protection Agency (EPA) and State certification programs;

2. Participation in an inter-laboratory or "round-robin" quality assurance program;

3. Verification of results with an alternative method. For example, calcium may be determined by atomic absorption, ion chromatography, or titrimetric methods. Volatile organic compounds may be determined through either purge and trap or liquid-liquid extraction methods; and,

4. Miscellaneous checks of equipment accuracy. Where trace analysis is involved, purity of the solvents, reagents and gases employed is of great concern. The laboratory maintains a service contract on all major instrumentation, including gas chromatograph, atomic absorption, ion chromatography and total organic carbon analyzers. Each of these instruments are serviced and maintained regularly.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURE
RE: HOLLOW-STEM AUGER MONITORING WELL INSTALLATION AND DEVELOPMENT
SOP-6

Boreholes for monitoring wells are drilled using a truck-mounted hollow-stem auger drill rig. The borehole diameter will be a minimum of four inches larger than the outside diameter of the casing when installing well screen. The hollow-stem auger provides minimal interruption of drilling while permitting soil sampling at desired intervals. Soil samples are collected by either hammering or hydraulically pushing a conventional split-barrel sampler containing pre-cleaned 2-inch diameter brass tubes. A geologist or engineer from Aegis Environmental, Inc. continuously logs each borehole during drilling and constantly checks drill cuttings for indications of both the first occurrence of groundwater and volatile hydrocarbons using either a portable photoionization detector (PID), flame ionization detector or an explosimeter. The sampler is rinsed between samples and either steam cleaned or washed with all other drilling equipment between borings to minimize the potential for cross-contamination.

Monitoring wells are cased with threaded, factory-perforated and blank Schedule 40 PVC. The perforated interval consists of slotted casing, generally with 0.020-inch wide by 1.5-inch long slots, with 42 slots per foot. A PVC cap may be secured to the bottom of the casing with stainless steel screws; no solvents or cements are used. Centering devices may be fastened to the casing to assure even distribution of filter material and grout within the borehole annulus. The well casing is thoroughly washed and/or steam cleaned, or may be purchased as pre-cleaned, prior to installation.

After setting the casing inside the hollow-stem auger, sand or gravel filter material is poured into the annular space to fill from boring bottom to generally 1 foot above the perforated interval. A 1- to 2-foot thick bentonite plug is set above this filter material to prevent grout from infiltrating into the filter pack. Either neat cement, containing about 5% bentonite, or sand-cement grout is then tremmied into the annular space from the top of the bentonite plug to near surface. A traffic-rated vault is installed around each wellhead for wells located in parking lots or driveways, while steel "stovepipes" are usually set over wellheads in landscaped areas.

After installation, the wells are thoroughly developed to remove residual drilling materials from the wellbore, and to improve well performance by removing fine material from the filter pack that may pass into the well. Well development techniques used may include pumping, surging, bailing, swabbing, jetting, flushing and air-lifting. All development water is collected either in drums or tanks for temporary storage, and properly disposed of depending on laboratory analytical results. To minimize the potential for cross-contamination between wells, all development equipment are either steam cleaned or properly washed prior to use.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURE
RE: GROUNDWATER PURGING AND SAMPLING
SOP-7

Prior to water sampling, each well is purged by evacuating a minimum of three well-bore volumes of groundwater. When required, purging will continue until either the discharge water temperature, conductivity or pH stabilize, a maximum of ten well-bore volumes of groundwater have been recovered or the well is bailed dry. When practical, the groundwater sample should be taken when the water level in the well recovers to at least 80% of its static level.

The sampling equipment consists of either a Teflon bailer, PVC bailer or stainless steel bladder pump with a Teflon bladder. If the sampling system is dedicated to the well, then the bailer is usually Teflon, but the bladder pump is PVC with a polypropylene bladder. In general and depending on the intended laboratory analysis, forty-milliliter (ml) glass, volatile-organic-analysis (VOA) vials, with Teflon septa, are used as sample containers.

The groundwater sample is decanted into each VOA vial in such a manner that there is no meniscus at the top of the vial. A cap is quickly secured to the top of the vial. The vial is then inverted and gently tapped to see if air bubbles are present. If none are present, the vial is labeled and refrigerated for delivery, under strict chain-of-custody, to the analytical laboratory. Label information should include a unique sample identification number, job identification number, date, time, type of analysis requested and the sampler's name.

For quality control purposes, a duplicate water sample is collected from each well. This sample is put on hold at the laboratory. When required, a trip blank is prepared at the laboratory and placed in the transport cooler. It is labeled similar to the well samples, remains in the cooler during transport and is analyzed by the laboratory along with the groundwater samples. In addition, a field blank may be prepared in the field when sampling equipment is not dedicated. The field blank is prepared after a pump or bailer has been either steam cleaned or properly washed, prior to use in the next well, and is analyzed along with the other samples. The field blank analysis demonstrates the effectiveness of the in-field cleaning procedures to prevent cross-contamination.

To minimize the potential for cross-contamination between wells, all well development and water sampling equipment not dedicated to a well is either steam cleaned or properly washed between use. As a second precautionary measure, wells are sampled in order of least to highest concentrations as established by available previous analyses.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURE
RE: MEASURING LIQUID LEVELS USING WATER LEVEL OR INTERFACE PROBE
SOP-12

Field equipment used for liquid-level gauging typically includes the measuring probe (water level or interface), light filter(s), and product bailer(s). The field kit also includes cleaning supplies (buckets, TSP, spray bottles, and deionized water) to be used in cleaning the equipment between wells.

Prior to measurement, the probe tip is lowered into the well until it touches bottom. Using the previously established top-of-casting (TOC) point, the probe cord (or halyard) is marked and an measuring tape (graduated in hundredths of a foot) is used to determine the distance between the probe end and the marking on the cord. This measurement is then recorded on the liquid-level data sheet as the depth to water (DTW).

When using the interface probe to measure liquid levels, the probe is first electrically grounded to either the metal stove pipe or another metal object nearby. When no ground is available, reproducible measurements can be obtained by clipping the ground lead to the handle of the interface probe case. After grounding the probe, the top of the well casing is fitted with a light filter to insure that sunlight does not interfere with the operation of the probe's optical mechanisms. The probe tip is then lowered into the well and submerged in the groundwater. An oscillating (beeping) tone indicates that the probe is in water. The probe is slowly raised until either the oscillating tone ceases or becomes a steady tone. In either case, this is the depth-to-water indicator and the DTW measurement is made accordingly. The steady tone indicates floating hydrocarbons. In this case, the probe is slowly raised until the steady tone ceases. This is the depth-to-product (DTP) indicator and the DTP measurement is made accordingly.

The process of lowering and raising the probe must be repeated several times to ensure accurate measurements. The DTW and DTP measurements are recorded on the liquid level data sheet. When floating product is indicated by the probe's response, a product bailer is lowered partially through the product-water interface to confirm the product on the water surface, and as further indication of product thickness, particularly in cases where the product layer is quite thin. This measurement is recorded on the data sheet as product thickness (PT).

In order to avoid cross contamination of wells during the liquid-level measurement process, wells are measured in the order of "clean" to "dirty" (where such information is available). In addition, all measurement equipment is cleaned with TSP solution and thoroughly rinsed with deionized water before use, between measurements in respective wells and at the completion of the day's use.

APPENDIX B

BORING LOGS

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: SB-1	SHEET 1 OF 1
E.C. Buehrer, Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: B&F Drilling	DRILLING METHOD: 7.5" HSA	
	DRILLER: Breece Franks	DRILLING RIG: Mobile B 61	
LAND OWNER: Bayport Investors	START DATE: 4/02/91	COMPLETED: 4/02/91	

SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	SAMPLE INTERVAL	SAMPLE RECOVER	DEPTH ft	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
					0	Surface: vegetated soil		
* SS	SB1 /C	5 6 8	2.5 to 3.0	16"		Silty Clay: dark brown/black, slight plasticity, some fine sand, 15% angular gravel particles, wet. (CL)	4	No Odor
					5	Total Depth = 4 ft		
					10			
					15			
					20			
					25			
					30			

Field Notes:
First water encountered at 2.5 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.0 in. ID sample Spoon
Soil Description after USCS

Aegis Environmental Inc.

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: SB-2	SHEET 1 OF 1
E.C. Buehrer, Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: B&F Drilling	DRILLING METHOD: 7.5" HSA	
	DRILLER: Breece Franks	DRILLING RIG: Mobile B 61	
LAND OWNER: Bayport Investors	START DATE: 4/02/91	COMPLETED: 4/02/91	

STAMPLE	SNAMPLER	BLOWS	SAMPLEV	SAMPLER	DEPTH ft	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
					0	Surface: vegetated soil		
* SS	SB2 /B	5 8 16	1.5 to 2.0	18"		Silty Clay: dark brown/black, 20% course gravel, sticky, medium plasticity, moist. (CL)	3	No Odor
* SS	SB2 /C	6 6 9	to 2.5	18"	5	Silty Sand: (SM) black, medium grained, subang. poorly graded, saturated.	NA	No Odor
						total Depth = 4 ft		
					10			
					15			
					20			
					25			
					30			

Field Notes:
First water encountered at 3.0 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.0 in. ID sample Spoon
Soil Description after USCS

Aegis Environmental Inc.

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: SB-3	SHEET 1 OF 1
E.C. Buehrer, Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: B&F Drilling	DRILLING METHOD: 7.5" HSA	
	DRILLER: Breece Franks	DRILLING RIG: Mobile B 61	
LAND OWNER: Bayport Investors	START DATE: 4/02/91	COMPLETED: 4/02/91	

SAMPLE TYPE	SAMPLE NUMBER	BLOWN COUNTS	SAMPLE LEVER	SAMPLE RECOVER	DEPTH ft	DESCRIPTION OF MATERIALS AND CONDITIONS Surface: concrete	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
* SS	SB3 /B	2 4 4	2.0 to 2.5	12"	0	Gravelly Silt: black, about 20% course angular gravel, medium plasticity, moist. (CL)	10	Slight Petroleum Odor
					5	Total Depth = 3 ft		
					10			
					15			
					20			
					25			
					30			

Field Notes:
First water encountered at 3.0 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.0 in. ID sample Spoon
Soil Description after USCS

Aegis Environmental Inc.

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: SB-4	SHEET 1 OF 1
E.C. Buehrer, Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: B&F Drilling	DRILLING METHOD: 7.5" HSA	
	DRILLER: Breece Franks	DRILLING RIG: Mobile B 61	
LAND OWNER: Bayport Investors	START DATE: 4/02/91	COMPLETED: 4/02/91	

SAMPLE TYPE	SAMPLE NUMBER	BLOWN COUNTS	SAMPLER LEVER	SAMPLE RECOVER	DEPTH ft	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
					0	Surface: concrete		
* SS	SB4 /C	6 4 2	2.5 to 3.0	12"	0	Silty Clay: dark brown, medium plasticity, about 20% course angular gravel, sticky, wet. (CL)	5	Moderate Petroleum Odor
					5	Total Depth = 3 ft		
					10			
					15			
					20			
					25			
					30			

Field Notes:
First water encountered at 3.0 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.0 in. ID sample Spoon
Soil Description after USCS

Aegis Environmental Inc.

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: SB-5	SHEET 1 OF 1
E.C. Buehrer, Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: B&F Drilling	DRILLING METHOD: 7.5" HSA	
	DRILLER: Breece Franks	DRILLING RIG: Mobile B 61	
LAND OWNER: Bayport Investors	START DATE: 4/03/91	COMPLETED: 4/03/91	

STAMPLE TYPE	SAMPLE NUMBER	BLOWN COUNTS	SAMPLE INTERVAL	SAMPLER	DEPTH ft	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
					0	Surface: concrete		
* SS	SB5 /B	2 2 4	2.0 to 2.5	16"		Silty Clay: medium to dark brown/gray, slight plasticity, about 20% course angular (CL)	3	No Odor
						gravel particles maximium size		
					5	25mm, moist.		
						Total Depth = 3 ft		
					10			
					15			
					20			
					25			
					30			

Field Notes:
First water encountered at 3.0 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.0 in. ID sample Spoon
Soil Description after USCS

Aegis Environmental Inc.

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: MW-5	SHEET 1 OF 1
E.C. Buehrer, Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: B&F Drilling	DRILLING METHOD: 10.0" HSA	
	DRILLER: Breece Franks	DRILLING RIG: Mobile B 61	
LAND OWNER: Bayport Investors	START DATE: 4/02/91	COMPLETED: 4/03/91	

STAMPLE	SNAMPLER	BCLOWNTS	SIANTPLER	SRAMCPLER	DEPTH ft	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
					0	Surface: concrete		
* SS	MW5 /B	4 5 5	2.0 to 2.5	10"		Gravelly Clay: dark brown-gray low plasticity, 40% subangular gravel particles 15 mm maximum size, slightly compacted and moist in place. (CL)	5	No Odor
					5			
ctg	NA	NA	NA	NA		Clay: black, medium to high plasticity, smooth, very sticky, wet. (OH)	NA	No Odor
					10	Total Depth = 14 ft		
					15			
					20			
					25			
					30			

Field Notes:
First water encountered at 3.0 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.0 in. ID sample Spoon
Soil Description after USCS

Aegis Environmental Inc.

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: MW-6	SHEET 1 OF 1
E.C. Buehrer, Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: B&F Drilling	DRILLING METHOD: 10.0" HSA	
	DRILLER: Breece Franks	DRILLING RIG: Mobile B 61	
LAND OWNER: Bayport Investors	START DATE: 4/02/91	COMPLETED: 4/03/91	

SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	SAMPLE INTERVAL	SAMPLER RECOVER	DEPTH ft	DESCRIPTION OF MATERIALS AND CONDITIONS Surface: concrete	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
ctg	NA	NA	NA	NA	0	Clayey Silt: brown, slightly plastic, root material, moist. (ML)	NA	No Odor
* SS	MW6 /B	10 8 7	1.5 to 2.0	14"		Silty Sand: dark brown, medium grained, angular, poorly graded, 20% fines, saturated. (SM)	NA	No Odor
					5			
ctg	NA	NA	NA	NA		Clay: black, medium to high plasticity, smooth, very sticky, wet. (OH)	NA	No Odor
					10			
						Total Depth = 12.5 ft		
					15			
					20			
					25			
					30			

Field Notes:
First water encountered at 2.0 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.0 in. ID sample Spoon
Soil Description after USCS

Aegis Environmental Inc.

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: MW-7	SHEET 1 OF 1
E.C. Buehrer, Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: B&F Drilling	DRILLING METHOD: 10.0" HSA	
	DRILLER: Breece Franks	DRILLING RIG: Mobile B 61	
LAND OWNER: Bayport Investors	START DATE: 4/02/91	COMPLETED: 4/03/91	

SAMPLE TYPE	SAMPLE NUMBER	BLOWN COUNTS	SAMPLE INTERVAL	SAMPLE RECOVER	DEPTH ft	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
					0	Surface: vegetated soil		
* SS	MW7 /A	8 6 7	1.0 to 1.5	8"		Sandy Silt: dark brown/black, fine sand, 20% course angular gravel, wet. (ML)	5	No Odor
					5			
ctg	NA	NA	NA	NA		Clay: black, medium to high plasticity, smooth, very sticky, wet. (OH)	NA	No Odor
					10	Total Depth = 11.5 ft		
					15			
					20			
					25			
					30			

Field Notes:
First water encountered at 1.0 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.0 in. ID sample Spoon
Soil Description after USCS

Aegis Environmental Inc.

Logged By: L.Braybrooks

PROJECT NAME/LOCATION:	PROJECT NUMBER: 90-007	BORING NUMBER: MW-8	SHEET 1 OF 1
E.C. Buehrer, Inc. 1061 Eastshore Hwy. Albany, CA.	CONTRACTOR: B&F Drilling	DRILLING METHOD: 10.0" HSA	
	DRILLER: Breece Franks	DRILLING RIG: Mobile B 61	
LAND OWNER: Bayport Investors	START DATE: 4/02/91	COMPLETED: 4/03/91	

SAMPLE TYPE	SAMPLE NUMBER	BLOWS/6"	SAMPLE TYPE	SAMPLE RECOVER	DEPTH ft	DESCRIPTION OF MATERIALS AND CONDITIONS	Hnu PID (ppm)	GENERAL OBSERVATION NOTES
					0	Surface: concrete		
* SS	MW8/A	6 4 7	1.5 to 2.0	6"		Clayey Silt: brown, some fine angular sand grains, about 15% course angular rock fragments, slight plasticity, moist. (ML)	NA	No Odor
					5			
ctg	NA	NA	NA	NA		Silty Clay: brown, medium plasticity, sticky, wet. (CL)	NA	No Odor
ctg	NA	NA	NA	NA	10	Clay: black, medium plasticity silty, some fine sand, wet. (OH)	NA	No Odor
						Total Depth = 13 ft		
					15			
					20			
					25			
					30			

Field Notes:
First water encountered at 3.0 ft.
SS = California Modified Split Spoon Sampler
* = Sample Analyzed by Laboratory
ctg = Cuttings sample
2.0 in. ID sample Spoon
Soil Description after USCS

Aegis Environmental Inc.

Logged By: L.Braybrooks

APPENDIX C

SOIL BORING SAMPLE LABORATORY REPORTS

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

RECEIVED
APR 2 9 1991
Ans'd.

Larry Braybrooks
Aegis Environmental Inc.
801 Riverside Ave., Ste C
Roseville, CA 95678

Date: 04-25-91
NET Client Acct No: 654
NET Pacific Log No: 6839
Received: 04-05-91 0800

Client Reference Information

1061 Eastshore Highway, Albany; Project: 90-007

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results SB-1-C 04-02-91 81698	SB-2-B 04-02-91 81699	Units
Oil & Grease(Total)	EPA9071	50	640	970	mg/Kg
Oil & Grease(Non-Polar)	SM5520EF	50	320	640	mg/Kg
METHOD 8010					
DATE ANALYZED			04-11-91	04-11-91	
DILUTION FACTOR*			1	1	
Bromodichloromethane		2.0	ND	ND	ug/Kg
Bromoform		2.0	ND	ND	ug/Kg
Bromomethane		2.0	ND	ND	ug/Kg
Carbon tetrachloride		2.0	ND	ND	ug/Kg
Chlorobenzene		2.0	ND	ND	ug/Kg
Chloroethane		2.0	ND	ND	ug/Kg
2-Chloroethylvinyl ether		5.0	ND	ND	ug/Kg
Chloroform		2.0	ND	ND	ug/Kg
Chloromethane		2.0	ND	ND	ug/Kg
Dibromochloromethane		2.0	ND	ND	ug/Kg
1,2-Dichlorobenzene		2.0	ND	ND	ug/Kg
1,3-Dichlorobenzene		2.0	ND	ND	ug/Kg
1,4-Dichlorobenzene		2.0	ND	ND	ug/Kg
Dichlorodifluoromethane		2.0	ND	ND	ug/Kg
1,1-Dichloroethane		2.0	ND	ND	ug/Kg
1,2-Dichloroethane		2.0	ND	ND	ug/Kg
1,1-Dichloroethene		2.0	ND	ND	ug/Kg
trans-1,2-Dichloroethene		2.0	ND	ND	ug/Kg
1,2-Dichloropropane		2.0	ND	ND	ug/Kg
cis-1,3-Dichloropropene		2.0	ND	ND	ug/Kg
trans-1,3-Dichloropropene		2.0	ND	ND	ug/Kg
Methylene Chloride		50	ND	ND	ug/Kg
1,1,2,2-Tetrachloroethane		2.0	ND	ND	ug/Kg
Tetrachloroethene		2.0	ND	ND	ug/Kg
1,1,1-Trichloroethane		2.0	ND	ND	ug/Kg
1,1,2-Trichloroethane		2.0	ND	ND	ug/Kg
Trichloroethene		2.0	ND	ND	ug/Kg
Trichlorofluoromethane		2.0	ND	ND	ug/Kg
Vinyl chloride		2.0	ND	ND	ug/Kg

NET Pacific, Inc.

Client No: 654
Client Name: Aegis Environmental Inc.
NET Log No: 6839

Date: 04-25-91
Page: 3

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results SB-1-C 04-02-91 81698	SB-2-B 04-02-91 81699	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-08-91	04-07-91	
METHOD GC FID/5030			--	--	
as Gasoline		1	ND	ND	mg/Kg
as Mineral Spirits		10	ND	ND	mg/kg
METHOD 8020			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-08-91	04-07-91	
Benzene		2.5	ND	ND	ug/Kg
Ethylbenzene		2.5	ND	ND	ug/Kg
Toluene		2.5	ND	ND	ug/Kg
Xylenes, total		2.5	ND	ND	ug/Kg
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			20	20	
DATE EXTRACTED			04-07-91	04-07-91	
DATE ANALYZED			04-10-91	04-10-91	
METHOD GC FID/3550			--	--	
as Diesel		1	ND	ND	mg/Kg
as Motor Oil		10	220	280	mg/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results SB-1-C 04-02-91 81698	SB-2-B 04-02-91 81699	Units
METHOD 8080					
DATE EXTRACTED			04-11-91	04-11-91	
DATE ANALYZED			04-15-91	04-15-91	
DILUTION FACTOR *			1	1	
POLYCHLORINATED BIPHENYLS			--	--	
Aroclor 1016		100	ND	ND	ug/Kg
Aroclor 1221		500	ND	ND	ug/Kg
Aroclor 1232		200	ND	ND	ug/Kg
Aroclor 1242		100	ND	ND	ug/Kg
Aroclor 1248		100	ND	ND	ug/Kg
Aroclor 1254		50	ND	ND	ug/Kg
Aroclor 1260		50	ND	66	ug/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results SB-2-C 04-02-91 81700	Units
Oil & Grease(Total)	EPA9071	50	680	mg/Kg
Oil & Grease(Non-Polar)	SM5520EF	50	370	mg/Kg
METHOD 8010				
DATE ANALYZED			04-11-91	
DILUTION FACTOR*			1	
Bromodichloromethane		2.0	ND	ug/Kg
Bromoform		2.0	ND	ug/Kg
Bromomethane		2.0	ND	ug/Kg
Carbon tetrachloride		2.0	ND	ug/Kg
Chlorobenzene		2.0	ND	ug/Kg
Chloroethane		2.0	ND	ug/Kg
2-Chloroethylvinyl ether		5.0	ND	ug/Kg
Chloroform		2.0	ND	ug/Kg
Chloromethane		2.0	ND	ug/Kg
Dibromochloromethane		2.0	ND	ug/Kg
1,2-Dichlorobenzene		2.0	ND	ug/Kg
1,3-Dichlorobenzene		2.0	ND	ug/Kg
1,4-Dichlorobenzene		2.0	ND	ug/Kg
Dichlorodifluoromethane		2.0	ND	ug/Kg
1,1-Dichloroethane		2.0	ND	ug/Kg
1,2-Dichloroethane		2.0	ND	ug/Kg
1,1-Dichloroethene		2.0	ND	ug/Kg
trans-1,2-Dichloroethene		2.0	ND	ug/Kg
1,2-Dichloropropane		2.0	ND	ug/Kg
cis-1,3-Dichloropropene		2.0	ND	ug/Kg
trans-1,3-Dichloropropene		2.0	ND	ug/Kg
Methylene Chloride		50	ND	ug/Kg
1,1,2,2-Tetrachloroethane		2.0	ND	ug/Kg
Tetrachloroethene		2.0	ND	ug/Kg
1,1,1-Trichloroethane		2.0	ND	ug/Kg
1,1,2-Trichloroethane		2.0	ND	ug/Kg
Trichloroethene		2.0	ND	ug/Kg
Trichlorofluoromethane		2.0	ND	ug/Kg
Vinyl chloride		2.0	ND	ug/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

			Descriptor, Lab No. and Results	
			SB-2-C 04-02-91	
Parameter	Method	Reporting Limit	81700	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			04-07-91	
METHOD GC FID/5030			--	
as Gasoline		1	ND	mg/Kg
as Mineral Spirits		10	ND	mg/kg
METHOD 8020			--	
DILUTION FACTOR *			1	
DATE ANALYZED			04-07-91	
Benzene		2.5	ND	ug/Kg
Ethylbenzene		2.5	ND	ug/Kg
Toluene		2.5	ND	ug/Kg
Xylenes, total		2.5	ND	ug/Kg
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			10	
DATE EXTRACTED			04-07-91	
DATE ANALYZED			04-10-91	
METHOD GC FID/3550			--	
as Diesel		1	ND	mg/Kg
as Motor Oil		10	260	mg/Kg

NET Pacific, Inc.

Client No: 654 Date: 04-25-91
*Client Name: Aegis Environmental Inc.
NET Log No: 6839 Page: 7

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results SB-2-C 04-02-91 81700	Units
METHOD 8080				
DATE EXTRACTED			04-11-91	
DATE ANALYZED			04-15-91	
DILUTION FACTOR *			1	
POLYCHLORINATED BIPHENYLS			--	
Aroclor 1016		100	ND	ug/Kg
Aroclor 1221		500	ND	ug/Kg
Aroclor 1232		200	ND	ug/Kg
Aroclor 1242		100	ND	ug/Kg
Aroclor 1248		100	ND	ug/Kg
Aroclor 1254		50	ND	ug/Kg
Aroclor 1260		50	ND	ug/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

			Descriptor, Lab No. and Results		
			SB-3-B 04-02-91	SB-4-C 04-02-91	
Parameter	Method	Reporting Limit	81706	81707	Units
Oil & Grease(Total)	EPA9071	50	360	2,400	mg/Kg
Oil & Grease(Non-Polar)	SM5520EF	50	150	730	mg/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results SB-3-B 04-02-91 81706	 SB-4-C 04-02-91 81707	Units
METHOD 8010					
DATE ANALYZED			04-11-91	04-11-91	
DILUTION FACTOR*			1	1	
Bromodichloromethane		2.0	ND	ND	ug/Kg
Bromoform		2.0	ND	ND	ug/Kg
Bromomethane		2.0	ND	ND	ug/Kg
Carbon tetrachloride		2.0	ND	ND	ug/Kg
Chlorobenzene		2.0	ND	ND	ug/Kg
Chloroethane		2.0	ND	ND	ug/Kg
2-Chloroethylvinyl ether		5.0	ND	ND	ug/Kg
Chloroform		2.0	ND	ND	ug/Kg
Chloromethane		2.0	ND	ND	ug/Kg
Dibromochloromethane		2.0	ND	ND	ug/Kg
1,2-Dichlorobenzene		2.0	ND	ND	ug/Kg
1,3-Dichlorobenzene		2.0	ND	ND	ug/Kg
1,4-Dichlorobenzene		2.0	ND	ND	ug/Kg
Dichlorodifluoromethane		2.0	ND	ND	ug/Kg
1,1-Dichloroethane		2.0	ND	ND	ug/Kg
1,2-Dichloroethane		2.0	ND	ND	ug/Kg
1,1-Dichloroethene		2.0	ND	ND	ug/Kg
trans-1,2-Dichloroethene		2.0	ND	ND	ug/Kg
1,2-Dichloropropane		2.0	ND	ND	ug/Kg
cis-1,3-Dichloropropene		2.0	ND	ND	ug/Kg
trans-1,3-Dichloropropene		2.0	ND	ND	ug/Kg
Methylene Chloride		50	ND	ND	ug/Kg
1,1,2,2-Tetrachloroethane		2.0	ND	ND	ug/Kg
Tetrachloroethene		2.0	ND	ND	ug/Kg
1,1,1-Trichloroethane		2.0	ND	ND	ug/Kg
1,1,2-Trichloroethane		2.0	ND	ND	ug/Kg
Trichloroethene		2.0	ND	ND	ug/Kg
Trichlorofluoromethane		2.0	ND	ND	ug/Kg
Vinyl chloride		2.0	ND	ND	ug/Kg

NET Pacific, Inc

Client No: 654 Date: 04-25-91
Client Name: Aegis Environmental Inc.
NET Log No: 6839 Page: 10

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

			Descriptor, Lab No. and Results		
			SB-3-B 04-02-91	SB-4-C 04-02-91	
Parameter	Method	Reporting Limit	81706	81707	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-07-91	04-07-91	
METHOD GC FID/5030			--	--	
as Gasoline		1	ND	3.0	mg/Kg
METHOD 8020			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-07-91	04-07-91	
Benzene		2.5	ND	12	ug/Kg
Ethylbenzene		2.5	ND	5.2	ug/Kg
Toluene		2.5	ND	120	ug/Kg
Xylenes, total		2.5	ND	18	ug/Kg
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			2	10	
DATE EXTRACTED			04-07-91	04-07-91	
DATE ANALYZED			04-10-91	04-10-91	
METHOD GC FID/3550			--	--	
as Diesel		1	ND	ND	mg/Kg
as Motor Oil		10	74	240	mg/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results SB-5-B 04-03-91 81708	MW-5-B 04-02-91 81709	Units
Oil & Grease(Total)	EPA9071	50	580	470	mg/Kg
Oil & Grease(Non-Polar)	SM5520EF	50	300	250	mg/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results SB-5-B 04-03-91 81708	MW-5-B 04-02-91 81709	Units
METHOD 8010					
DATE ANALYZED			04-11-91	04-11-91	
DILUTION FACTOR*			1	1	
Bromodichloromethane		2.0	ND	ND	ug/Kg
Bromoform		2.0	ND	ND	ug/Kg
Bromomethane		2.0	ND	ND	ug/Kg
Carbon tetrachloride		2.0	ND	ND	ug/Kg
Chlorobenzene		2.0	ND	ND	ug/Kg
Chloroethane		2.0	ND	ND	ug/Kg
2-Chloroethylvinyl ether		5.0	ND	ND	ug/Kg
Chloroform		2.0	ND	ND	ug/Kg
Chloromethane		2.0	ND	ND	ug/Kg
Dibromochloromethane		2.0	ND	ND	ug/Kg
1,2-Dichlorobenzene		2.0	ND	ND	ug/Kg
1,3-Dichlorobenzene		2.0	ND	ND	ug/Kg
1,4-Dichlorobenzene		2.0	ND	ND	ug/Kg
Dichlorodifluoromethane		2.0	ND	ND	ug/Kg
1,1-Dichloroethane		2.0	ND	ND	ug/Kg
1,2-Dichloroethane		2.0	ND	ND	ug/Kg
1,1-Dichloroethene		2.0	ND	ND	ug/Kg
trans-1,2-Dichloroethene		2.0	ND	ND	ug/Kg
1,2-Dichloropropane		2.0	ND	ND	ug/Kg
cis-1,3-Dichloropropene		2.0	ND	ND	ug/Kg
trans-1,3-Dichloropropene		2.0	ND	ND	ug/Kg
Methylene Chloride		50	ND	ND	ug/Kg
1,1,2,2-Tetrachloroethane		2.0	ND	ND	ug/Kg
Tetrachloroethene		2.0	ND	ND	ug/Kg
1,1,1-Trichloroethane		2.0	ND	ND	ug/Kg
1,1,2-Trichloroethane		2.0	ND	ND	ug/Kg
Trichloroethene		2.0	ND	ND	ug/Kg
Trichlorofluoromethane		2.0	ND	ND	ug/Kg
Vinyl chloride		2.0	ND	ND	ug/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results SB-5-B 04-03-91 81708	 MW-5-B 04-02-91 81709	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-07-91	04-07-91	
METHOD GC FID/5030			--	--	
as Gasoline		1	ND	ND	mg/Kg
METHOD 8020			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-07-91	04-07-91	
Benzene		2.5	ND	ND	ug/Kg
Ethylbenzene		2.5	ND	ND	ug/Kg
Toluene		2.5	ND	ND	ug/Kg
Xylenes, total		2.5	ND	ND	ug/Kg
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			4	4	
DATE EXTRACTED			04-07-91	04-07-91	
DATE ANALYZED			04-10-91	04-10-91	
METHOD GC FID/3550			--	--	
as Diesel		1	ND	ND	mg/Kg
as Motor Oil		10	120	150	mg/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

			Descriptor, Lab No. and Results		
			MW-6-B 04-02-91	MW-7-A 04-03-91	
Parameter	Method	Reporting Limit	81710	81711	Units
Oil & Grease(Total)	EPA9071	50	73	110	mg/Kg
Oil & Grease(Non-Polar)	SM5520EF	50	55	58	mg/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-6-B 04-02-91 81710	 MW-7-A 04-03-91 81711	Units
METHOD 8010					
DATE ANALYZED			04-11-91	04-11-91	
DILUTION FACTOR*			1	1	
Bromodichloromethane		2.0	ND	ND	ug/Kg
Bromoform		2.0	ND	ND	ug/Kg
Bromomethane		2.0	ND	ND	ug/Kg
Carbon tetrachloride		2.0	ND	ND	ug/Kg
Chlorobenzene		2.0	ND	ND	ug/Kg
Chloroethane		2.0	ND	ND	ug/Kg
2-Chloroethylvinyl ether		5.0	ND	ND	ug/Kg
Chloroform		2.0	ND	ND	ug/Kg
Chloromethane		2.0	ND	ND	ug/Kg
Dibromochloromethane		2.0	ND	ND	ug/Kg
1,2-Dichlorobenzene		2.0	ND	ND	ug/Kg
1,3-Dichlorobenzene		2.0	ND	ND	ug/Kg
1,4-Dichlorobenzene		2.0	ND	ND	ug/Kg
Dichlorodifluoromethane		2.0	ND	ND	ug/Kg
1,1-Dichloroethane		2.0	ND	ND	ug/Kg
1,2-Dichloroethane		2.0	ND	ND	ug/Kg
1,1-Dichloroethene		2.0	ND	ND	ug/Kg
trans-1,2-Dichloroethene		2.0	ND	ND	ug/Kg
1,2-Dichloropropane		2.0	ND	ND	ug/Kg
cis-1,3-Dichloropropene		2.0	ND	ND	ug/Kg
trans-1,3-Dichloropropene		2.0	ND	ND	ug/Kg
Methylene Chloride		50	ND	ND	ug/Kg
1,1,2,2-Tetrachloroethane		2.0	ND	ND	ug/Kg
Tetrachloroethene		2.0	ND	ND	ug/Kg
1,1,1-Trichloroethane		2.0	ND	ND	ug/Kg
1,1,2-Trichloroethane		2.0	ND	ND	ug/Kg
Trichloroethene		2.0	ND	ND	ug/Kg
Trichlorofluoromethane		2.0	ND	ND	ug/Kg
Vinyl chloride		2.0	ND	ND	ug/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

			Descriptor, Lab No. and Results		
			MW-6-B 04-02-91	MW-7-A 04-03-91	
Parameter	Method	Reporting Limit	81710	81711	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-08-91	04-07-91	
METHOD GC FID/5030			--	--	
as Gasoline		1	ND	ND	mg/Kg
METHOD 8020			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-08-91	04-07-91	
Benzene		2.5	ND	ND	ug/Kg
Ethylbenzene		2.5	ND	ND	ug/Kg
Toluene		2.5	ND	ND	ug/Kg
Xylenes, total		2.5	ND	ND	ug/Kg
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			1	5	
DATE EXTRACTED			04-07-91	04-07-91	
DATE ANALYZED			04-10-91	04-10-91	
METHOD GC FID/3550			--	--	
as Diesel		1	ND	ND	mg/Kg
as Motor Oil		10	27	220	mg/Kg

NET Pacific Inc

Client No: 654 Date: 04-25-91
Client Name: Aegis Environmental Inc.
NET Log No: 6839 Page: 17

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-8-A 04-02-91 81712	Units
Oil & Grease(Total)	EPA9071	50	88	mg/Kg
Oil & Grease(Non-Polar)	SM5520EF	50	ND	mg/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-8-A 04-02-91 81712	Units
METHOD 8010				
DATE ANALYZED			04-11-91	
DILUTION FACTOR*			1	
Bromodichloromethane		2.0	ND	ug/Kg
Bromoform		2.0	ND	ug/Kg
Bromomethane		2.0	ND	ug/Kg
Carbon tetrachloride		2.0	ND	ug/Kg
Chlorobenzene		2.0	ND	ug/Kg
Chloroethane		2.0	ND	ug/Kg
2-Chloroethylvinyl ether		5.0	ND	ug/Kg
Chloroform		2.0	ND	ug/Kg
Chloromethane		2.0	ND	ug/Kg
Dibromochloromethane		2.0	ND	ug/Kg
1,2-Dichlorobenzene		2.0	ND	ug/Kg
1,3-Dichlorobenzene		2.0	ND	ug/Kg
1,4-Dichlorobenzene		2.0	ND	ug/Kg
Dichlorodifluoromethane		2.0	ND	ug/Kg
1,1-Dichloroethane		2.0	ND	ug/Kg
1,2-Dichloroethane		2.0	ND	ug/Kg
1,1-Dichloroethene		2.0	ND	ug/Kg
trans-1,2-Dichloroethene		2.0	ND	ug/Kg
1,2-Dichloropropane		2.0	ND	ug/Kg
cis-1,3-Dichloropropene		2.0	ND	ug/Kg
trans-1,3-Dichloropropene		2.0	ND	ug/Kg
Methylene Chloride		50	ND	ug/Kg
1,1,2,2-Tetrachloroethane		2.0	ND	ug/Kg
Tetrachloroethene		2.0	ND	ug/Kg
1,1,1-Trichloroethane		2.0	ND	ug/Kg
1,1,2-Trichloroethane		2.0	ND	ug/Kg
Trichloroethene		2.0	ND	ug/Kg
Trichlorofluoromethane		2.0	ND	ug/Kg
Vinyl chloride		2.0	ND	ug/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-8-A 04-02-91 81712	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			04-07-91	
METHOD GC FID/5030			--	
as Gasoline		1	ND	mg/Kg
METHOD 8020			--	
DILUTION FACTOR *			1	
DATE ANALYZED			04-07-91	
Benzene		2.5	ND	ug/Kg
Ethylbenzene		2.5	ND	ug/Kg
Toluene		2.5	ND	ug/Kg
Xylenes, total		2.5	ND	ug/Kg
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			2	
DATE EXTRACTED			04-07-91	
DATE ANALYZED			04-10-91	
METHOD GC FID/3550			--	
as Diesel		1	ND	mg/Kg
as Motor Oil		10	46	mg/Kg

Ref: 1061 Eastshore Highway, Albany; Project: 90-007

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Diesel	1	mg/Kg	97	ND	N/A	N/A	2.2
Motor Oil	10	mg/Kg	99	ND	N/A	N/A	N/A
Chlorobenzene	2.0	ug/Kg	88	ND	75	87	14
1,1-DCE	2.0	ug/Kg	113	ND	111	109	1.0
TCE	2.0	ug/Kg	90	ND	101	107	5.0
Gasoline	1	mg/Kg	97	ND	91	100	9.4
Benzene	2.5	ug/Kg	102	ND	82	89	6.5
Toluene	2.5	ug/Kg	112	ND	84	88	5.1
Gasoline	1	mg/kg	97	ND	86	90	4.5
Gasoline	1	mg/Kg	97	ND	87	88	1.1
Aroclor 1254	50	ug/Kg	90	ND	98	100	2.0
COMMENT: Blank Results were ND on other analytes tested.							
O&G total	50	mg/Kg	110	ND	111	104	6.5
O&G non-polar	50	mg/Kg	103	ND	N/A	N/A	N/A

NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 16th Edition, APHA, 1985.

Phone (916) 782 2110
FAX (916) 786-7830

AEGIS Environmental Consultants, Inc.

Sample Identification/Field Chain of Custody Record

Send results to:
Aegis Environmental
801 Riverside, Suite C
Roseville, CA 95678

Site Address: 1061 Eastshore Hwy Albany, CA
AEGIS Project #: 90-007
Shipped By: Aegis Environmental, Inc.
Shipped To: NET Pacific
Project Manager Larry Braybrooks

For Shell Projects Only
WIC:
AFE:
CT/DL:
Shell Engineer:
Hazardous Materials Suspected? (yes/no) X

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required
3' bg	SB-1	SB1-C	4-2-91	soil/Brass	1	8080, 5520, 3550/8015, 8020/8015/5030 w/mineral sp
2' bg	SB-2	SB2-B	"		1	" + 8080 PCB's only
2.5' bg	SB-2	SB2-C	"		1	" + 8080 "
2' bg	SB-3	SB3-B	"		1	5520, 3550/8015 8020/8010, 5030/8015
2.5' bg	SB-4	SB4-C	"		1	"
2' bg	SB-5	SB5-B	"		1	"
2' bg	MW-5	MW5-B	4-3-91		1	"
2' bg	MW-6	MW6-B	4-2-91		1	"

Sampler(s) (signature) Larry Braybrooks

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
none	Larry Braybrooks	Mike Tavassi	4/4/91	1250	
	Mike Tavassi	[illegible]			

Sealed for shipment by: (signature) Larry Braybrooks Date/Time: 4/4/91 9:00 Shipment Method: Courier

Received for Lab by: (signature) [illegible] Date/Time: [illegible] Comments: Hold samples pending results of initial analysis -10 day turnaround-

Receiving Laboratory: Please return original form after signing for receipt of samples.

White (Original) Yellow [illegible]

Phone (916) 782 2110
FAX (916) 786-7830

AEGIS Environmental Consultants, Inc.

Sample Identification/Field Chain of Custody Record

Send results to:
Aegis Environmental
801 Riverside, Suite C
Roseville, CA 95678

Site Address: 1061 Eastshore Hwy, Albany, CA
AEGIS Project #: 90-007
Shipped By: Aegis Environmental, Inc.
Shipped To: NET Pacific
Project Manager: Larry Braybrooks

For Shell Projects Only
WIC: X
AFE: X
CT/DL: X
Shell Engineer:
Hazardous Materials Suspected? (yes/no)

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required
1' bg	MW-7	MW7-A	4-3-91	soil/Brass	1	3520, 3550/8015 8020/8010, 5030/8015
1.5' bg	MW-8	MW8-A	4-2-91	"	1	"

Sampler(s) (signature): Larry Braybrooks

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
above	(Cemented)	Mike Tavani	4/4/91	1250	
	Mike Tavani	(NCS)			

Sealed for shipment by: (signature) Larry Braybrooks Date/Time: 4/3/91 9:00 Shipment Method: Courier

Received for Lab by: (signature) [illegible] Date/Time: 4/5/91 0800 Comments: Hold samples pending results of initial analysis - 10 day turnaround -

Receiving Laboratory: Please return original form after signing for receipt of samples.

White/Original Yellow/Lab Copy Pink/Aegis Copy

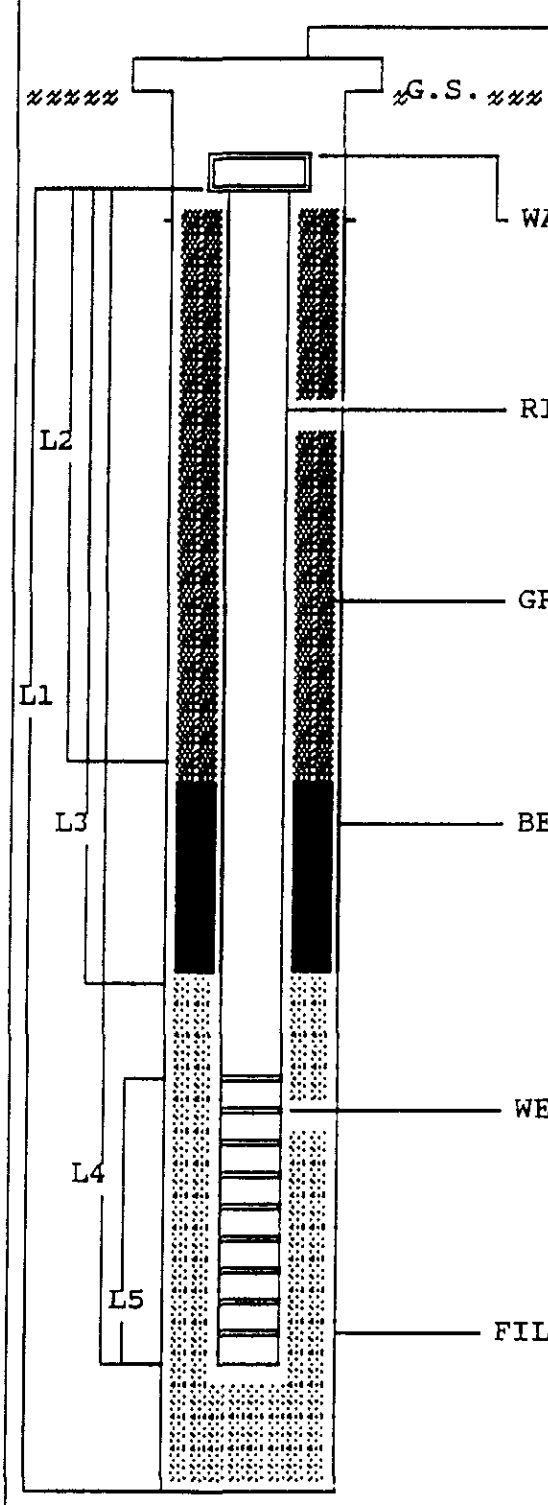
APPENDIX D

MONITORING WELL CONSTRUCTION DETAILS

MONITORING WELL CONSTRUCTION DETAILS

E.C. Buehrer
PROJECT: 1061 Eastshore Hwy. Albany, CA. DATE : 4/02/91

PROJECT NO.: 90-007 WELL NO.: 5



CHRISTY BOX
Box Diameter: 8 in.
Type (flush/above): above
Distance Above Ground : 1.0 in.

WATER PROOF LOCKING CAP
Type: Geostore
Lock Cap: yes/expanding

RISER MATERIAL
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded

GROUT SEAL
Material Mix: Portland Cement
Total Depth From Surface: 1.0 ft.

BENTONITE SEAL
Type: pellets
Size: 1/4 in.
Total Thickness: 1.5 ft.

WELL SCREEN
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded
Slot Size: 0.01
Total Length: 10 ft.

FILTER PACK
Type Material: 1/30 sand
Total Thickness: 11.0 ft.
Depth to Bottom: 13.5 ft.
Distance Above Screen: 1.0 ft.

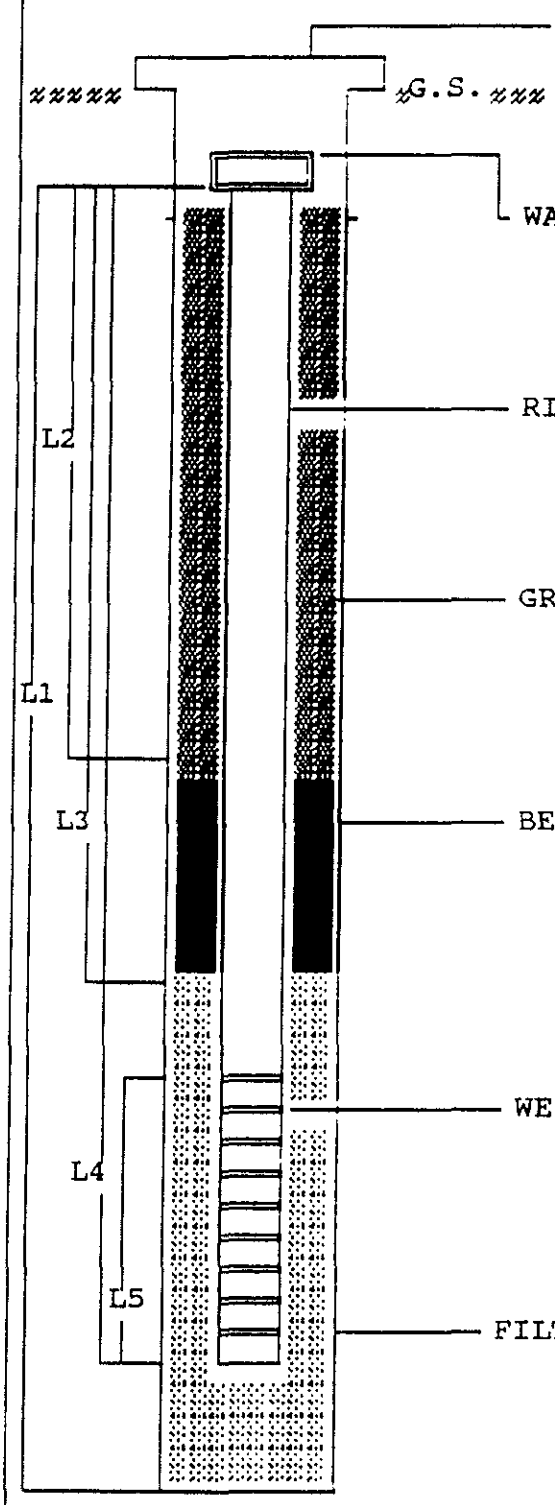
L1	14.0 ft.
L2	1.0 ft.
L3	2.5 ft.
L4	13.5 ft.
L5	10.0 ft.

TOTAL DEPTH OF WELL: 13.5 ft.
TOTAL DEPTH OF BORING: 14.0 ft.
DIAMETER OF BORING: 10.0 in.
METHOD OF DRILLING: hollow stem aug
DATE STARTED: 4/2/91
DATE COMPLETED: 4/3/91

MONITORING WELL CONSTRUCTION DETAILS

E.C. Buehrer
PROJECT: 1061 Eastshore Hwy. Albany, CA. DATE : 4/02/91

PROJECT NO.: 90-007 WELL NO.: 6



Box Diameter: 8 in.
Type (flush/above): above
Distance Above Ground : 10.0 in.

Type: Geostore
Lock Cap: yes/expanding

Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded

Material Mix: Portland cmnt.
Total Depth From Surface: 1.0 ft.

Type: pellets
Size: 1/4 in.
Total Thickness: 1 ft.

Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded
Slot Size: 0.01
Total Length: 10 ft.

Type Material: 1/30 sand
Total Thickness: 10.5 ft.
Depth to Bottom: 12.5 ft.
Distance Above Screen: 6 in.

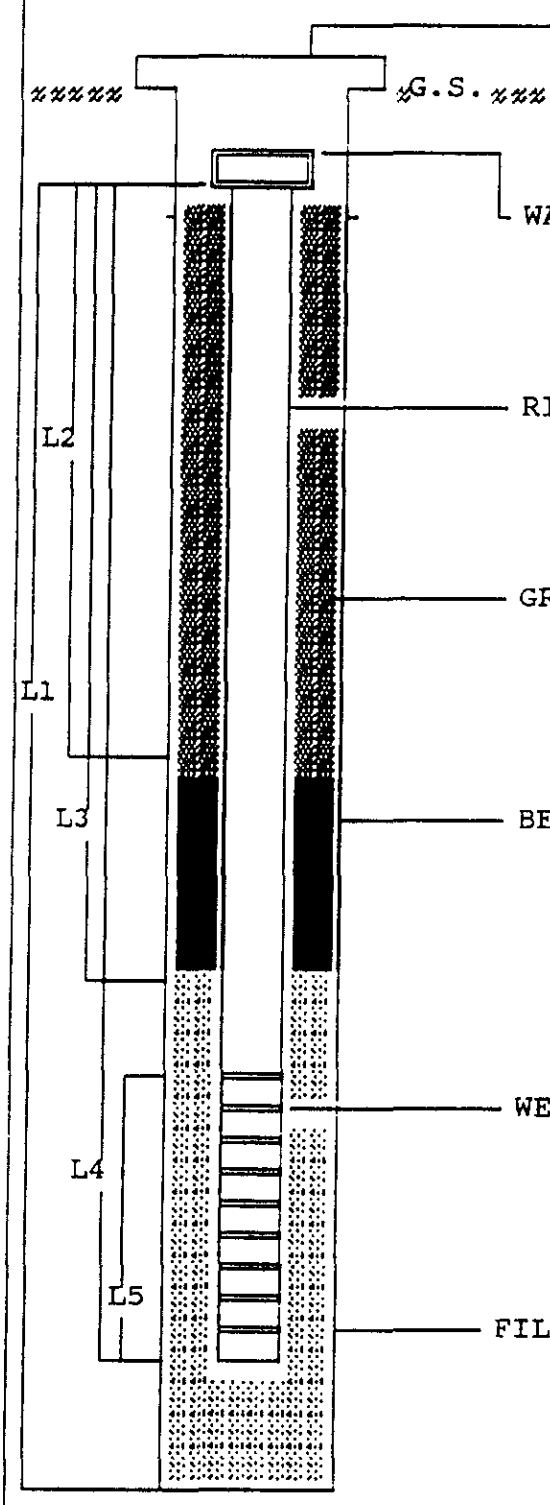
L1	12.5 ft.
L2	1.0 ft.
L3	2.0 ft.
L4	12.5 ft.
L5	10.0 ft.

TOTAL DEPTH OF WELL: 12.5 ft.
TOTAL DEPTH OF BORING: 12.5 ft.
DIAMETER OF BORING: 10.0 in.
METHOD OF DRILLING: hollow stem aug
DATE STARTED: 4/2/91
DATE COMPLETED: 4/3/91

MONITORING WELL CONSTRUCTION DETAILS

E.C. Buehrer
PROJECT: 1061 Eastshore Hwy. Albany, CA. DATE : 4/02/91

PROJECT NO.: 90-007 WELL NO.: 7



CHRISTY BOX
Box Diameter: NA
Type (flush/above): NA
Distance Above Ground : NA

WATER PROOF LOCKING CAP
Type: Geostore
Lock Cap: yes/expanding

RISER MATERIAL
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded

GROUT SEAL
Material Mix: NA
Total Depth From Surface: NA

BENTONITE SEAL
Type: pellets
Size: 1/4 in.
Total Thickness: 0.5 ft.

WELL SCREEN
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded
Slot Size: 0.01
Total Length: 10 ft.

FILTER PACK
Type Material: 1/30 sand
Total Thickness: 11.25 ft.
Depth to Bottom: 11.5 ft.
Distance Above Screen: 3 in.

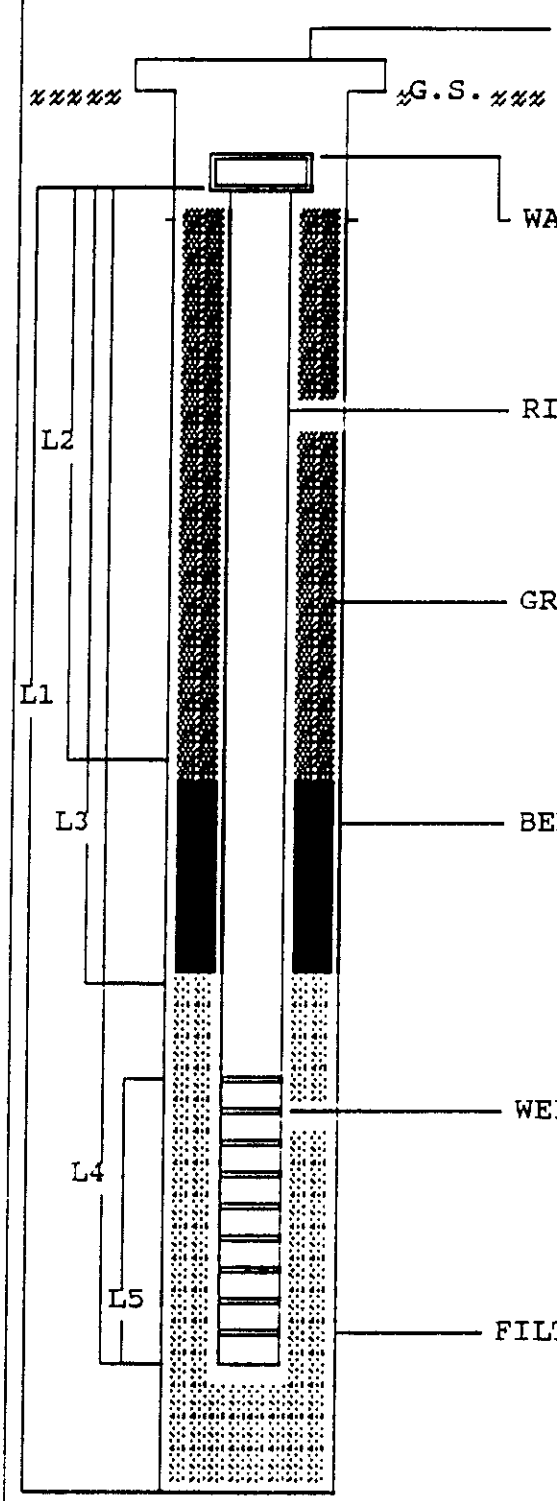
L1	11.5 ft.
L2	0.0 ft.
L3	0.5 ft.
L4	10.5 ft.
L5	10.0 ft.

TOTAL DEPTH OF WELL: 10.5 ft.
TOTAL DEPTH OF BORING: 11.5 ft.
DIAMETER OF BORING: 10.0 in.
METHOD OF DRILLING: hollow stem aug
DATE STARTED: 4/2/91
DATE COMPLETED: 4/3/91

MONITORING WELL CONSTRUCTION DETAILS

E.C. Buehrer
PROJECT: 1061 Eastshore Hwy. Albany, CA. DATE : 4/02/91

PROJECT NO.: 90-007 WELL NO.: 8



CHRISTY BOX
Box Diameter: 8 in.
Type (flush/above): above
Distance Above Ground : 0.5 in.

WATER PROOF LOCKING CAP
Type: Geostore
Lock Cap: yes/expanding

RISER MATERIAL
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded

GROUT SEAL
Material Mix: Portland Cement
Total Depth From Surface: 1.0 ft.

BENTONITE SEAL
Type: pellets
Size: 1/4 in.
Total Thickness: 1.0 ft.

WELL SCREEN
Type Material: PVC
Diameter: 4 in.
Joint Type: flush threaded
Slot Size: 0.01
Total Length: 10 ft.

FILTER PACK
Type Material: 1/30 sand
Total Thickness: 11.0 ft.
Depth to Bottom: 13.0 ft.
Distance Above Screen: 1.0 ft.

L1	13.0 ft.
L2	1.0 ft.
L3	2.0 ft.
L4	13.0 ft.
L5	10.0 ft.

TOTAL DEPTH OF WELL: 13.0 ft.
TOTAL DEPTH OF BORING: 13.0 ft.
DIAMETER OF BORING: 10.0 in.
METHOD OF DRILLING: hollow stem aug
DATE STARTED: 4/2/91
DATE COMPLETED: 4/3/91

APPENDIX E

GROUNDWATER SAMPLE LABORATORY REPORTS

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
495 Tesconi Circle
Santa Rosa, CA 95401
Tel. (707) 526-7200
Fax (707) 526-9623

RECEIVED
APR 26 1991
Ans'd.

Larry Braybrooks
Aegis Environmental Inc.
801 Riverside Ave., Ste C
Roseville, CA 95678

Date: 04-23-91
NET Client Acct No: 654
NET Pacific Log No: 6910
Received: 04-09-91 1700

Client Reference Information

1061 E. Shore Highway, Albany; Project: 10-90007

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

Ref: 1061 E. Shore Highway, Albany; Project: 10-90007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-5 04-08-91 82131	MW-6 04-08-91 82132	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-10-91	04-10-91	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	ND	ND	mg/L
as Mineral Spirits		0.05	ND	0.15	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-10-91	04-10-91	
Benzene		0.5	ND	ND	ug/L
Ethylbenzene		0.5	0.6	0.6	ug/L
Toluene		0.5	1.8	1.8	ug/L
Xylenes, total		0.5	1.0	1.0	ug/L
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			04-14-91	04-14-91	
DATE ANALYZED			04-16-91	04-16-91	
METHOD GC FID/3510			--	--	
as Diesel		0.05	0.22	0.21	mg/L
as Motor Oil		0.5	ND	ND	mg/L

Ref: 1061 E. Shore Highway, Albany; Project: 10-90007

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-5 04-08-91 82131	MW-6 04-08-91 82132	Units
Oil & Grease(Total)	EPA9070	5	ND	ND	mg/L
Oil & Grease(Non-Polar)	SM5520BF	5	ND	ND	mg/L
METHOD 8010					
DATE ANALYZED			04-18-91	04-18-91	
DILUTION FACTOR*			1	1	
Bromodichloromethane		0.4	ND	ND	ug/L
Bromoform		0.4	ND	ND	ug/L
Bromomethane		0.4	ND	ND	ug/L
Carbon tetrachloride		0.4	ND	ND	ug/L
Chlorobenzene		0.4	ND	ND	ug/L
Chloroethane		0.4	ND	ND	ug/L
2-Chloroethylvinyl ether		1.0	ND	ND	ug/L
Chloroform		0.4	ND	ND	ug/L
Chloromethane		0.4	ND	ND	ug/L
Dibromochloromethane		0.4	ND	ND	ug/L
1,2-Dichlorobenzene		0.4	ND	ND	ug/L
1,3-Dichlorobenzene		0.4	ND	ND	ug/L
1,4-Dichlorobenzene		0.4	ND	ND	ug/L
Dichlorodifluoromethane		0.4	ND	ND	ug/L
1,1-Dichloroethane		0.4	ND	ND	ug/L
1,2-Dichloroethane		0.4	ND	ND	ug/L
1,1-Dichloroethene		0.4	ND	ND	ug/L
trans-1,2-Dichloroethene		0.4	ND	ND	ug/L
1,2-Dichloropropane		0.4	ND	ND	ug/L
cis-1,3-Dichloropropene		0.4	ND	ND	ug/L
trans-1,3-Dichloropropene		0.4	ND	ND	ug/L
Methylene Chloride		10	ND	ND	ug/L
1,1,2,2-Tetrachloroethane		0.4	ND	ND	ug/L
Tetrachloroethene		0.4	ND	ND	ug/L
1,1,1-Trichloroethane		0.4	ND	ND	ug/L
1,1,2-Trichloroethane		0.4	ND	ND	ug/L
Trichloroethene		0.4	ND	ND	ug/L
Trichlorofluoromethane		0.4	ND	ND	ug/L
Vinyl chloride		2.0	ND	ND	ug/L

Ref: 1061 E. Shore Highway, Albany; Project: 10-90007

			Descriptor, Lab No. and Results		
			MW-7 04-08-91	MW-8 04-08-91	
Parameter	Method	Reporting Limit	82133	82134	Units
Oil & Grease(Total)	EPA9070	5	ND	ND	mg/L
Oil & Grease(Non-Polar)	SM5520BF	5	ND	ND	mg/L
METHOD 8010					
DATE ANALYZED			04-18-91	04-18-91	
DILUTION FACTOR*			1	1	
Bromodichloromethane		0.4	ND	ND	ug/L
Bromoform		0.4	ND	ND	ug/L
Bromomethane		0.4	ND	ND	ug/L
Carbon tetrachloride		0.4	ND	ND	ug/L
Chlorobenzene		0.4	ND	ND	ug/L
Chloroethane		0.4	ND	ND	ug/L
2-Chloroethylvinyl ether		1.0	ND	ND	ug/L
Chloroform		0.4	ND	ND	ug/L
Chloromethane		0.4	ND	ND	ug/L
Dibromochloromethane		0.4	ND	ND	ug/L
1,2-Dichlorobenzene		0.4	ND	ND	ug/L
1,3-Dichlorobenzene		0.4	ND	ND	ug/L
1,4-Dichlorobenzene		0.4	ND	ND	ug/L
Dichlorodifluoromethane		0.4	ND	ND	ug/L
1,1-Dichloroethane		0.4	ND	ND	ug/L
1,2-Dichloroethane		0.4	ND	ND	ug/L
1,1-Dichloroethene		0.4	ND	ND	ug/L
trans-1,2-Dichloroethene		0.4	ND	ND	ug/L
1,2-Dichloropropane		0.4	ND	ND	ug/L
cis-1,3-Dichloropropene		0.4	ND	ND	ug/L
trans-1,3-Dichloropropene		0.4	ND	ND	ug/L
Methylene Chloride		10	ND	ND	ug/L
1,1,2,2-Tetrachloroethane		0.4	ND	ND	ug/L
Tetrachloroethene		0.4	ND	ND	ug/L
1,1,1-Trichloroethane		0.4	ND	ND	ug/L
1,1,2-Trichloroethane		0.4	ND	ND	ug/L
Trichloroethene		0.4	ND	ND	ug/L
Trichlorofluoromethane		0.4	ND	ND	ug/L
Vinyl chloride		2.0	ND	ND	ug/L

NET Pacific Inc

Client No: 654 Date: 04-23-91
Client Name: Aegis Environmental Inc.
NET Log No: 6910 Page: 5

Ref: 1061 E. Shore Highway, Albany; Project: 10-90007

			Descriptor, Lab No. and Results		
			MW-7	MW-8	
			04-08-91	04-08-91	
Parameter	Method	Reporting Limit	82133	82134	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-10-91	04-10-91	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	ND	ND	mg/L
as Mineral Spirits		0.05	ND	ND	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			04-10-91	04-10-91	
Benzene		0.5	ND	ND	ug/L
Ethylbenzene		0.5	ND	ND	ug/L
Toluene		0.5	1.4	1.6	ug/L
Xylenes, total		0.5	0.8	1.0	ug/L
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			04-14-91	04-14-91	
DATE ANALYZED			04-16-91	04-16-91	
METHOD GC FID/3510			--	--	
as Diesel		0.05	ND	ND	mg/L
as Motor Oil		0.5	ND	ND	mg/L

NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromnos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 16th Edition, APHA, 1985.

Phone (916) 782 2110
FAX (916) 786-7830

AEGIS Environmental Consultants, Inc.

Sample Identification/Field Chain of Custody Record

(4/11)

Send results to:
Aegis Environmental
801 Riverside, Suite C
Roseville, CA 95678

Site Address: 1061 E. SHORE HWY ALBANY CA
AEGIS Project #: 10-90007
Shipped By: AEGIS ENV. INC.
Shipped To: NET PACIFIC (SANTA ROSA)
Project Manager LARRY BRAYBROOKS

For Shell Projects Only
WIC:
AFE:
CT/DL:
Shell Engineer:
Hazardous Materials Suspected? (yes/no)

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required
MW-5	1061 E. SHORE HWY ALBANY, CA.	MW-5	4/8/91	WATER	8	OEG 5520 GRAVIMETRIC DIESEL 3510/8015 HALOCARBONS/BTEX 8010/8020 GAS/MINERAL SPIRITS 5030/8015
MW-6	↓	MW-6	↓	↓	↓	↓
MW-7	↓	MW-7	↓	↓	↓	↓
MW-8	↓	MW-8	↓	↓	↓	↓

Sampler(s) (signature) Jude Pelas

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
MW's 5,6,7&8	Jude Pelas		4/9/91	9AM	
	Anthony W. Bellini				

Sealed for shipment by: (signature) Jude Pelas Date/Time: 4/9/91 9AM Shipment Method: NET COURIER

Received for Lab by: (signature) Date/Time: Comments: STANDARD TURNAROUND

Receiving Laboratory: Please return original form after signing for receipt of samples.

White/Original Yellow/Lab Copy Pink/File Copy

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

RECEIVED
MAY 2 8 1991
Ans'd.

Clark Owen
Aegis Environmental Inc.
301 Riverside Ave., Ste C
Roseville, CA 95678

Date: 05-23-91
NET Client Acct No: 654
NET Pacific Log No: 7443
Received: 05-10-91 0800

Client Reference Information

1061 East Shore Highway, Albany; Project: 90-007

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

NET Pacific, Inc.

Client No: 654 Date: 05-23-91
Client Name: Aegis Environmental Inc.
NET Log No: 7443 Page: 2

Ref: 1061 East Shore Highway, Albany; Project: 90-007

			Descriptor, Lab No. and Results		
			MW-1 05-08-91	MW-2 05-08-91	
Parameter	Method	Reporting Limit	84885	84886	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--		
DILUTION FACTOR *			1	1	
DATE ANALYZED			05-19-91	05-20-91	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	ND	ND	mg/L
as Mineral Spirits		0.05	0.12	ND	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			05-19-91	05-20-91	
Benzene		0.5	ND	ND	ug/L
Ethylbenzene		0.5	ND	ND	ug/L
Toluene		0.5	ND	0.6	ug/L
Xylenes, total		0.5	ND	ND	ug/L
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			05-13-91	05-13-91	
DATE ANALYZED			05-13-91	05-13-91	
METHOD GC FID/3510			--	--	
as Diesel		0.05	0.18	0.22	mg/L
as Motor Oil		0.5	ND	ND	mg/L

NET Pacific, Inc

Client No: 654 Date: 05-23-91
*Client Name: Aegis Environmental Inc.
NET Log No: 7443 Page: 3

Ref: 1061 East Shore Highway, Albany; Project: 90-007

			Descriptor, Lab No. and Results		
			MW-3 05-08-91	MW-4 05-08-91	
Parameter	Method	Reporting Limit	84887	84888	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			05-19-91	05-19-91	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	ND	ND	mg/L
as Mineral Spirits		0.05	0.10	0.05	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			05-19-91	05-19-91	
Benzene		0.5	1.0	ND	ug/L
Ethylbenzene		0.5	ND	ND	ug/L
Toluene		0.5	ND	ND	ug/L
Xylenes, total		0.5	ND	ND	ug/L
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			05-13-91	05-13-91	
DATE ANALYZED			05-13-91	05-13-91	
METHOD GC FID/3510			--	--	
as Diesel		0.05	0.23	0.15	mg/L
as Motor Oil		0.5	ND	ND	mg/L

Ref: 1061 East Shore Highnway, Albany; Project: 90-007

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Diesel	0.05	mg/L	94	ND	68	70	2.3
Motor Oil	0.5	mg/L	94	ND	N/A	N/A	N/A
Gasoline	0.05	mg/L	87	ND	80	88	9.2
Benzene	0.5	ug/L	102	ND	91	100	9.2
Toluene	0.5	ug/L	102	ND	97	105	8.7
Gasoline	0.05	mg/L	94	ND	93	95	2.1
Benzene	0.5	ug/L	114	ND	103	100	3.0
Toluene	0.5	ug/L	117	ND	103	101	2.0

COMMENT: Blank Results were ND on other analytes tested.

ATTACHMENT 5

SOIL EXCAVATION RESULTS REPORT
July 1, 1992

SOIL EXCAVATION RESULTS REPORT

E.C. Buehrer
1061 Eastshore Highway
Albany, California

Aegis Project No. 90-007

July 1, 1992

Prepared By:
AEGIS ENVIRONMENTAL, INC.
1050 Melody Lane, Suite 160
Roseville, California 95678
(916) 782-2110

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

This report documents subsurface remediation and investigation activities conducted by Aegis Environmental, Inc. (Aegis), at E.C. Buehrer, Inc., located at 1061 Eastshore Highway in Albany, California (Figure 1). This report is based, in part, on information obtained by Aegis from E.C. Buehrer and regulatory agency files, and is subject to modification as newly acquired information may warrant.

1.1 Purpose

The purpose of the activities was to:

- remove an underground storage tank (UST) and associated piping;
- remediate soil containing petroleum hydrocarbons beneath the site by excavation;
- characterize and dispose of the excavated soil stockpiled on site; and,
- install a monitoring well in the area of the excavation, within 10 feet of the UST removed in 1988.

1.2 Scope

The completed scope of work, summarized below, was performed in accordance with Aegis' standard operating procedures included in Appendix A. Because depth to groundwater was known to be approximately 3.5 to 4.0 feet below grade, the maximum depth of the excavation was approximately 3.0 to 3.5 feet.

- From April 29 through May 6, 1992, approximately 1,000 to 1,200 cubic yards of soil were excavated from the site. Soil samples were collected from the excavation and submitted for laboratory analysis to characterize the soil and assess remaining hydrocarbon concentrations.
- Excavated soils were stockpiled on and covered by plastic sheeting.
- On May 4, 1992, a 1,000-gallon gasoline UST was removed. Soil and water samples were collected from beneath the tank and associated dispenser.
- On May 7 through May 13, 1992, the excavation was backfilled with crushed rock and sand, and compacted to 90+ percent.
- On May 20, 1992, concrete paving completed site restoration activities.

- On June 3, 1992, two groundwater monitoring wells were installed in the area of the excavation.

- On June 9 and 10, 1992, after soil characterization and profiling, the stockpiled soil was transported from the site, by a licensed hauler, to the Browning-Ferris Industries (BFI) landfill in Livermore.

2.0 BACKGROUND

2.1 Site Description

The site is located in an industrial area of Albany, Alameda County, California (Figure 2). Fork-lifts and other equipment are rented and maintained at the facility. An equipment maintenance building with service bays lies along the western property boundary and a welding/machine shop is on the southern portion of the property. Adjacent to the welding/machine shop was a 1,000-gallon, double-wall fiberglass UST containing regular-unleaded gasoline as well as one dispenser island. The tank, product lines, and dispenser were removed during the May 1992 excavation activities.

2.2 Site History

In December 1987, a 300-gallon UST containing waste-oil reportedly failed a precision tank test. The failed test, in part, prompted a decision to remove the waste-oil tank. On February 18, 1988, the single-wall, steel waste-oil tank and a 1,000-gallon, single-wall, steel UST gasoline tank were excavated and removed from the site. According to file documents, the 1,000-gallon UST had not been in use for the previous 2 to 3 years. Because of shallow groundwater, liquid samples were collected from the excavation instead of soil samples. The sample from the waste-oil tank excavation contained 17 parts-per-million (ppm) total oil & grease (TOG), 0.10 ppm benzene, and several chlorinated hydrocarbon compounds at concentrations up to 0.028 ppm. The liquid sample from the gasoline UST excavation contained 2.0 ppm total petroleum hydrocarbons (TPH), as gasoline, and 0.18 ppm benzene ("Proposal for Subsurface Investigation," Hageman-Shank, Inc., November 16, 1989).

2.3 Previous Investigation Activities

- In April 1990, Aegis drilled and installed four monitoring wells (MW-1 through MW-4) at the site. Volatile petroleum hydrocarbons (TPH, as gasoline, and benzene, toluene, ethylbenzene, and total xylenes (BTEX)) and non-volatile hydrocarbons (TPH, as diesel and motor oil, TOG) were detected in soil and groundwater samples from these wells (Aegis' "Hydrogeological Results Report," June 12, 1990).

- On April 2 and 3, 1991, nine soil borings were drilled and sampled to depths ranging from 3 to 14 feet below grade to further assess the vertical and lateral extent of petroleum hydrocarbons in the soil and groundwater. Four of the soil borings were converted to monitoring wells MW-5 through MW-8. All soil samples from these borings contained detectable concentrations of TPH, as motor oil (up to 280 ppm), and TOG (up to 2,400 ppm). Only one soil sample contained detectable concentrations of TPH, as gasoline (3.0 ppm), and BTEX (up to 0.12 ppm). Groundwater samples from the wells contained concentrations of TPH, as diesel (up to 230 parts-per-billion (ppb)), and BTEX (up to 1.8 ppb; Aegis' "Problem Assessment Report," August 1, 1991).

- The wells have been sampled quarterly since April 1991. Wells MW-1 through MW-4 were abandoned in August 1991 in anticipation of the excavation activities.

2.4 Adjacent Land Uses

The site is located in an industrial area of Albany, California, near the Berkeley city limits. Adjacent to the site's eastern boundary is an open area that formerly accommodated an Alcan aluminum metals plant. To the north exists an irrigation and plumbing supply business, to the south is a diesel-engine service and repair shop. Eastshore Highway is located to the west of the site, parallel to Interstate Highway 80.

Environmental investigations have been documented east of the site at the former Alcan plant and the Southern Pacific Railroad tracks, and south of the site at a bus repair shop. Underground storage tanks were being removed from this latter site in May 1992. There are numerous industrial facilities within a 1/2-mile-radius of the subject site.

2.5 General Geology and Hydrogeology

The 1977 geologic map of California indicates the site is underlain by Quaternary age alluvium. The soils types reported during excavation activities were organic, heavy clay ("bay mud") to a depth of approximately 4 feet below existing grade. Material such as glass, leaves, and metal were encountered at various depths across the site, indicating previous filling of the area had occurred.

Site surface drainage is mainly to the west, following local topography. San Francisco Bay is less than 1/2 mile west of the site. Periodic water-level measurements in the groundwater monitoring wells on site indicate groundwater is approximately 3 to 4 feet below surface, and varies with tidal fluctuations. The groundwater gradient is estimated to be approximately 0.01 ft/ft to the west.

3.0 EXCAVATION PROCEDURES AND RESULTS

3.1 Procedures

Excavation activities were conducted with a backhoe to remediate soil containing petroleum hydrocarbons beneath the site. The work was directed by Aegis personnel and performed according to Aegis' "Soil Remediation Work Plan," dated August 21, 1991, and approved by the Alameda County Department of Environmental Health (ACDEH). Because depth to groundwater was known to be approximately 3 to 4 feet below grade, the maximum excavation depth was approximately 3.5 feet. The extent of the excavation (Figure 2) was estimated based on previously acquired soil boring data and site structure constraints. Aegis personnel attempted to segregate the soil into stockpiles based on hydrocarbon content estimated by sight, odor, and with a portable photoionization detector. The field segregation effort was not completely successful because concentrations of semi- or non-volatile oil & grease constituents, the primary hydrocarbon compounds present, generally cannot be readily estimated by field observation and screening techniques. All soil was stockpiled on and covered by plastic sheeting.

Samples collected from the excavation were analyzed by Coast to Coast Analytical Services of San Luis Obispo, California, a state-certified analytical laboratory. Soil samples were collected from:

- several locations within the excavation, for soil characterization;
- beneath the removed UST and dispenser, according to underground tank closure regulatory guidelines; and,
- the sidewalls of the excavation (every 20 feet) to assess hydrocarbon concentrations remaining in the soil.

Laboratory reports and chain-of-custody forms documenting analytical methods and results and sample disposition are included in Appendix B for the soil characterization samples, Appendix C for the UST excavation samples, and Appendix D for the soil excavation samples.

3.2 Excavation Results

The excavation work began by demolishing the concrete paving on April 29, 1992. During the demolition, the water line for the welding/machine shop was damaged and was later repaired. Groundwater monitoring well MW-8 was damaged during concrete excavation activities, and subsequently completely removed.

Four soil samples (A, B, C, and D, not shown on Figure 2) were collected after concrete removal from obviously oily material in the approximate center of the proposed excavation area. The samples were collected from a depth of approximately 1 foot below ground surface for "worst case" initial soil characterization. The four soil samples were composited into two samples and submitted for analysis for soluble metals, using the California WET extraction (Waste Extraction Test), and semi-volatile TPH, using the TCLP extraction (Toxic Characteristic Leaching Procedure). The analytical results (Appendix B), indicated no soluble metals present in the soil at concentrations exceeding state-designated hazardous waste levels. No detectable concentrations of TCLP/TPH were reported.

From April 29 through May 6, 1992, approximately 1,000 to 1,200 cubic yards of soil containing petroleum hydrocarbons were excavated from the southwest portion of the site, as shown on Figure 2.

On May 4, 1992, a 1,000-gallon gasoline UST was removed from the site. Under the direction of ACDEH personnel, two soil samples were collected from the bottom of the tank excavation (#1 and #2) and one soil sample was collected from beneath the associated dispenser (#3) to assess hydrocarbon concentrations in the soil in these areas. The soil samples were analyzed for TOG, TPH, as diesel and gasoline, and BTEX. The analytical results, summarized in Table 1, indicated only TOG was detected in the soil samples, at concentrations ranging from 170 to 230 ppm. A groundwater sample (#8) was collected from water in the tank excavation. The water sample was analyzed for the same compounds as the soil samples, and for the metals cadmium, chromium, lead, nickel, and zinc. The analytical results, summarized in Table 1 and Appendix C, indicated 0.1 ppm TPH, as gasoline, and 21 ppm TOG were the only organic compounds detected. The metals results were all below applicable drinking water and/or hazardous waste limits.

From May 5 through 7, 1992, soil samples #9 through #25 were collected from the sidewalls of the excavation at a depth of approximately 3 feet below grade. All sidewall samples were analyzed for TOG. The analytical results, summarized in Table 1 and Figure 2, indicated concentrations of TOG ranging from less than 50 to 3,000 ppm, with the average concentration between 500 and 1,000 ppm.

On May 6 through 13, 1992, the excavation was backfilled with crushed rock and sand, and compacted to 90+ percent. The compaction testing report is included in Appendix F. A concrete slab was poured on the top 6 inches of the backfill material.

On June 9 and 10, 1992, after soil characterization and profiling, the stockpiled soil was transported from the site, by a licensed hauler, to the BFI landfill.

4.0 MONITORING WELL INSTALLATION

On June 3, 1992, two groundwater monitoring wells were installed in the area of the excavation. Well MW-9 was installed to monitor groundwater in the vicinity of the former UST. Well MW-8 was installed to replace the original well destroyed during site excavation activities.

Wells MW-8 and MW-9 were installed to depths of 13.5 and 10.5 feet below grade, respectively. The 4-inch-diameter wells were constructed and developed according to the Aegis SOP included in Appendix A. Boring logs and well construction details are included in Appendix E. No soil samples were collected for analysis because the wells were installed in excavation backfill. Native clays were found at a depth of 4 feet below grade. Groundwater was noted at a depth of 5.5 feet below grade in MW-9 and 11 feet below grade in MW-8.

The new wells will be sampled quarterly beginning in June 1992, along with the other wells on site.

5.0 DISCUSSION

Nearly every soil sample collected and analyzed during this investigation contained detectable concentrations of TOG, similar to results of previous investigation activities. The apparently random distribution of TOG concentrations in the excavation sidewalls implies there is no discernible source of the hydrocarbons in the subsurface. Because the site is in a filled industrial area, it is possible that the extensive heavy hydrocarbons (TOG) are a result of contaminated fill and/or a long history of surface and subsurface hydrocarbon releases from a variety of industrial activities.

6.0 REMARKS/SIGNATURES

The interpretations and conclusions contained in this report reflect our professional opinions, and were developed in accordance with currently available information and accepted geologic, hydrogeologic, and engineering practices at this time and for this specific site. Other than this, no warranty is implied or intended.

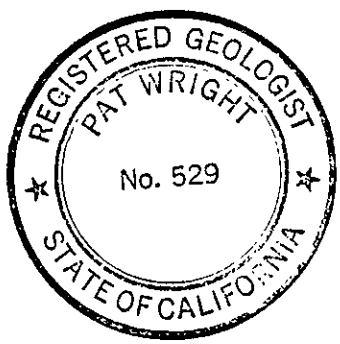
This report has been prepared solely for the use of Federated Insurance Company. Any reliance on this report by third parties shall be at such parties' sole risk.

The work reported herein was conducted under the direct supervision of the professional geologist, registered with the State of California, whose signature appears below.

AEGIS ENVIRONMENTAL, INC.

Paul Graff
Senior Geologist

Pat Wright
Registered Geologist
CRG No. 529



7-1-92
Date

MK/PW/law

7.0 REFERENCES

Aegis Environmental, Inc., June 12, 1990, "Hydrogeological Investigation Results Report."

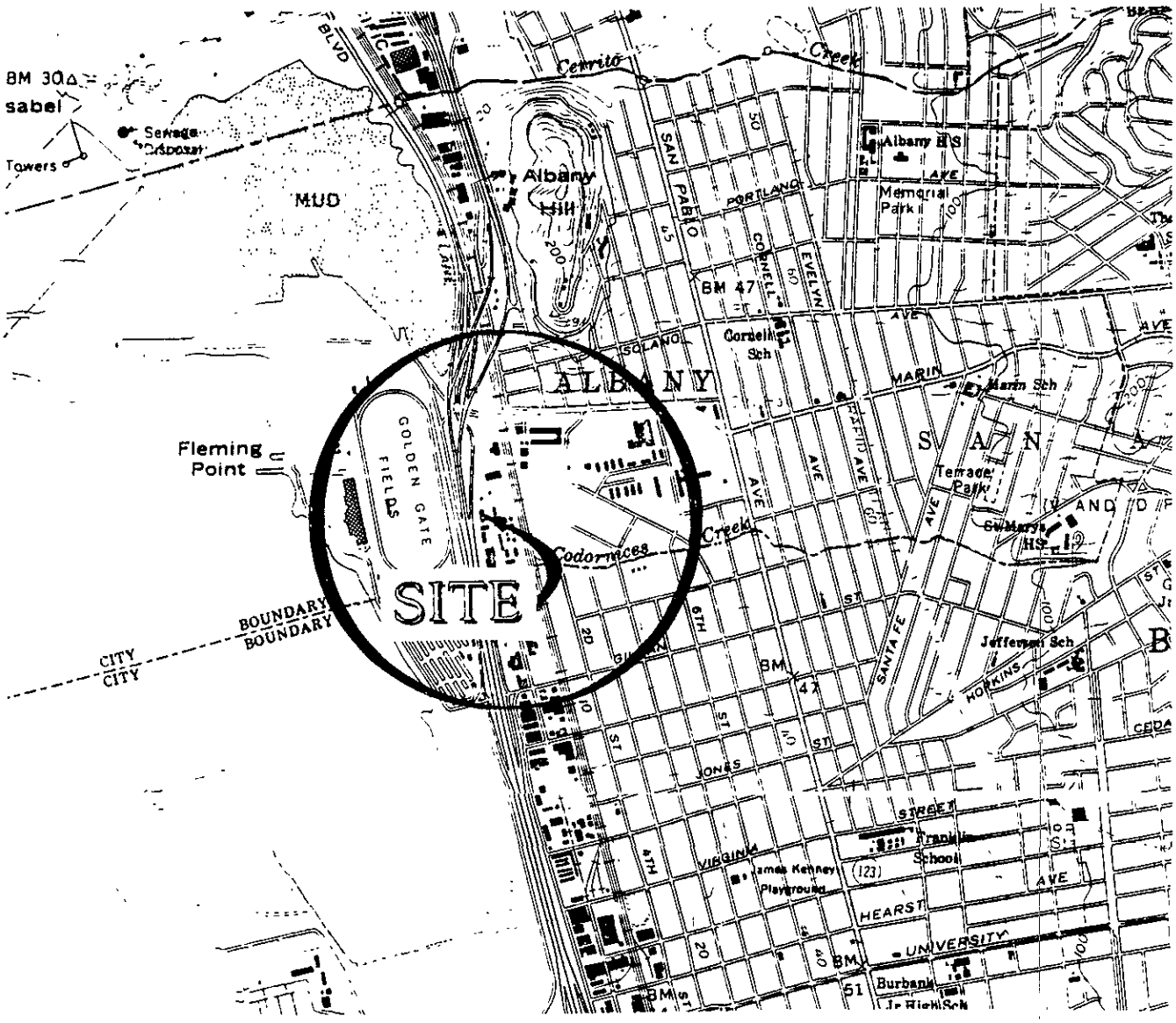
Aegis Environmental, Inc., August 1, 1991, "Problem Assessment Report."

Aegis Environmental, Inc., August 21, 1991, "Soil Remediation Work Plan."

Aegis Environmental, Inc., February 18, 1992, Letter "Revision to August 21, 1991 Soil Remediation Plan."

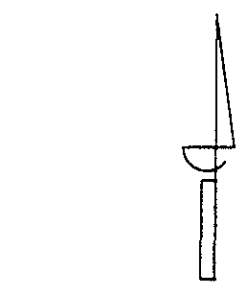
Hageman-Shank, Inc., November 16, 1989, "Proposal For Subsurface Investigation."

FIGURES



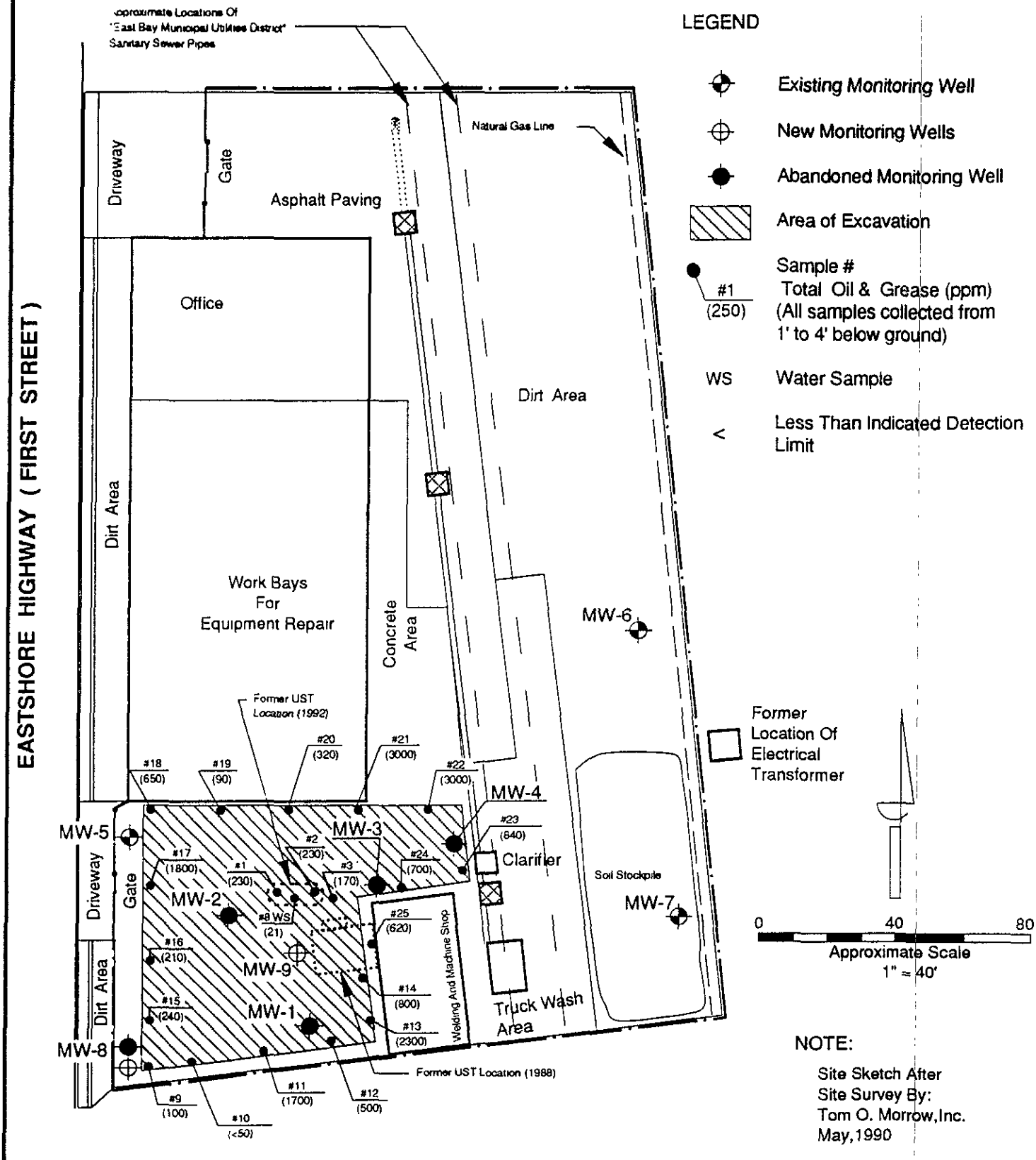
GENERAL NOTES:

BASE MAP FROM USGS
7.5 MINUTE TOPOGRAPHIC
RICMOND & OAKLAND WEST, CALIF.



0 2000 4000
Approximate Scale
1" = 2000'

AEGIS ENVIRONMENTAL, INC.		SITE LOCATION MAP	FIGURE 1
DRAWN BY: Ed Berand	DATE: May 15, 1992	E.C. Buehrer Associates, Inc. 1061 Eastshore Highway Albany, CA	PROJECT NUMBER: 10-90007
REVISED BY:	DATE		
REVIEWED BY:	DATE		



NOTE:

Site Sketch After
Site Survey By:
Tom O. Morrow, Inc.
May, 1990

All Locations Approximate

AEGIS ENVIRONMENTAL, INC.		SITE MAP WITH EXCAVATION AND SOIL SAMPLE LOCATIONS	FIGURE 2
DRAWN BY: Ed Bernard	DATE: May 15, 1992		
REVISED BY: D. Hada	DATE: June 11, 1992	E.C. Buehrer Associates, Inc. 1061 Eastshore Highway Albany, CA	PROJECT NUMBER: 10-90007
REVIEWED BY:	DATE:		

TABLES

TABLE 1
ANALYTICAL RESULTS: SOIL AND GROUNDWATER SAMPLES FROM BENEATH UST
MAY 4, 1992
E.C. BUEHRER, INC.
1061 EASTSHORE HIGHWAY, ALBANY, CALIFORNIA
(All results in parts-per-million)

Sample ID	Sample Type and Depth (Feet Below Grade)	Total Petroleum Hydrocarbons			Aromatic Volatile Organics				EDC [1]	EDB [2]
		Gasoline	Diesel	Oil & Grease	Benzene	Toluene	Ethyl-benzene	Total Xylenes		
#1	Soil from below west side of UST, 5 feet deep	<	<	230	<	<	<	<	<<0.5	<<0.5
#2	Soil from below east side of UST, 5 feet deep	<	<	230	<	<	<	<	<<0.5	<<0.5
#3	Soil from below fuel dispenser, 1 foot deep	<	<	170	<	<	<	<	<<0.5	<<0.5
#8	Groundwater from tank excavation	0.1	<	21	<	<	<	0.028	<<0.5	<<0.5

NOTES:
- < = Below Practical Quantitation Reporting Limits per "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites" (August 10, 1990). (PQL for BTEX = 0.005 ppm, TPH, as gasoline and diesel = 1.0 ppm).
- << = Below the indicated detection limit as labeled in the analytical laboratory results reports, Appendix B.
- --- = Not analyzed.
- NA = Not applicable.
- [1] = 1,2-dichloroethane.
- [2] = Ethylene dibromide.

Soil samples 4, 5, 6, and 7 were collected from the excavation but not analyzed.

TABLE 2

ANALYTICAL RESULTS: EXCAVATION SOIL SAMPLES
APRIL 29 THROUGH MAY 7, 1992

E.C. BUEHRER, INC.
1061 EASTSHORE HIGHWAY, ALBANY, CALIFORNIA
(All results in parts-per-million)

Sample ID	Sample Location	Oil & Grease
#9	3 feet deep, south wall	100
#10	3 feet deep, south wall	<50
#11	3 feet deep, south wall	1,700
#12	3 feet deep, south wall	500
#13	3 feet deep, east wall	2,300
#14	3 feet deep, east wall	800
#15	3 feet deep, west wall	240
#16	3 feet deep, west wall	210
#17	3 feet deep, west wall	1,800
#18	3 feet deep, north wall	650
#19	3 feet deep, north wall	90
#20	3 feet deep, north wall	320
#21	3 feet deep, north wall	3,000
#22	3 feet deep, north wall	3,000
#23	3 feet deep, northeast wall	840
#24	3 feet deep, southeast wall	700
#25	3 feet deep, southeast wall	620

NOTES: * = Analyzed after TCLP extraction.
< = Less than indicated detection limit.

APPENDIX A

STANDARD OPERATING PROCEDURES

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: SOIL EXCAVATION AND SAMPLING
SOP-2

Excavation and subsequent soil sampling is performed under the direction of a registered geologist or civil engineer. To reduce the potential for cross-contamination, all excavation equipment is either steam-cleaned or washed prior to use and between excavations. Soil samples for chemical analysis are collected in cleaned, thin-walled brass tubes of varying diameters and lengths (e.g., 6 inches long by 2 inches outside-diameter) or other appropriate cleaned sample container. If used, one tube may be set in a 2-inch inside-diameter hand-driven sampler. To reduce the potential for cross-contamination between samples, the sampler is washed in a solution and double-rinsed between each sampling event.

Upon recovery, a portion of the soil sample is sealed for later screening with either a portable photoionization detector, flame ionization detector, or an explosimeter. Another portion of the sample is used for description of the excavated materials. A third portion of the sample is hermetically sealed, labeled and refrigerated for delivery, under strict chain-of-custody, to the analytical laboratory. These procedures minimize the potential for cross-contamination and volatilization of volatile organic compounds prior to chemical analysis.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: SOIL CLASSIFICATION
SOP-3

Soil samples are classified according to the Unified Soil Classification System. Representative portions of the samples may be shipped under strict chain-of-custody to an analytical laboratory for further examination and verification of the in-field classification, and analysis of soil mechanical and/or petrophysical properties. The soil types are indicated on logs of either excavations or borings together with depths corresponding to the sampling points, and other pertinent information.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY PROCEDURES
SOP-4

Sample identification and chain-of-custody procedures ensure sample integrity, and document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis is labeled to identify the job number, date, time of sample collection, a sample number unique to the sample, any in-field measurements made, sampling methodology, name(s) of on site personnel and any other pertinent field observations also recorded on the field excavation or boring log.

Chain-of-custody forms are used to record possession of the sample from time of collection to its arrival at the laboratory. During shipment, the person with custody of the samples will relinquish them to the next person by signing the chain-of-custody form(s) and noting the date and time. The sample-control officer at the laboratory will verify sample integrity, correct preservation, confirm collection in the proper container(s) and ensure adequate volume for analysis.

If these conditions are met, the samples will be assigned unique laboratory log numbers for identification throughout analysis and reporting. The log numbers will be recorded on the chain-of-custody forms and in the legally-required log book maintained in the laboratory. The sample description, date received, client's name, and any other relevant information will also be recorded.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: LABORATORY ANALYTICAL QUALITY ASSURANCE AND CONTROL
SOP-5

In addition to routine instrument calibration, replicates, spikes, blanks, spiked blanks, and certified reference materials are routinely analyzed at methods specific frequencies to monitor precision and bias. Additional components of the laboratory Quality Assurance/Quality Control program include:

1. Participation in state and federal laboratory accreditation/certification programs;

2. Participation in both U.S. EPA Performance Evaluation studies (WS and WP studies) and inter-laboratory performance evaluation programs;

3. Standard operating procedures describing routine and period instrument maintenance;

4. "Out-of-Control"/Corrective Action documentation procedures; and,

5. Multi-level review of raw data and client reports.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURE
RE: HOLLOW-STEM AUGER MONITORING WELL INSTALLATION AND DEVELOPMENT
SOP-6

Boreholes for monitoring wells are drilled using a truck-mounted, hollow-stem auger drill rig. The borehole diameter will be a minimum of 4 inches larger than the outside-diameter of the casing when installing well screen. The hollow-stem auger provides minimal interruption of drilling while permitting soil sampling at desired intervals. Soil samples are collected by either hammering or hydraulically pushing a conventional split-barrel sampler containing pre-cleaned 2-inch-diameter brass tubes. A geologist or engineer from Aegis Environmental, Inc., continuously logs each borehole during drilling and constantly checks drill cuttings for indications of both the first occurrence of groundwater and volatile hydrocarbons using either a portable photoionization detector, flame ionization detector, or an explosimeter. The sampler is rinsed between samples and either steam-cleaned or washed with all other drilling equipment between borings to minimize the potential for cross-contamination.

Monitoring wells are cased with threaded, factory-perforated and blank Schedule 40 PVC. The perforated interval consists of slotted casing, generally with 0.020 inch wide by 1.5-inch long slots, with 42 slots per foot. A PVC cap may be secured to the bottom of the casing with stainless steel screws; no solvents or cements are used. Centering devices may be fastened to the casing to assure even distribution of filter material and grout within the borehole annulus. The well casing is thoroughly washed and/or steam-cleaned, or may be purchased as pre-cleaned, prior to installation.

After setting the casing inside the hollow-stem auger, sand or gravel filter material is poured into the annular space to fill from boring bottom to generally 1 foot above the perforated interval. A 1 to 2-foot thick bentonite plug is set above this filter material to prevent grout from infiltrating into the filter pack. Either neat cement, containing about 5 percent bentonite, or sand-cement grout is then tremmied into the annular space from the top of the bentonite plug to near surface. A traffic-rated vault is installed around each wellhead for wells located in parking lots or driveways, while steel "stovepipes" are usually set over wellheads in landscaped areas.

After installation, the wells are thoroughly developed to remove residual drilling materials from the wellbore, and to improve well performance by removing fine material from the filter pack that may pass into the well. Well development techniques used may include pumping, surging, bailing, swabbing, jetting, flushing, and air-lifting. All development water is collected either in drums or tanks for temporary storage, and properly disposed of depending on laboratory analytical results. To minimize the potential for cross-contamination between wells, all development equipment are either steam-cleaned or properly washed prior to use.

APPENDIX B

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS: SOIL CHARACTERIZATION SAMPLES

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories
San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707) 747-2765

MAY 2 9 1992
Ans'd MDK

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

Lab Number : BD-0228-1
Project : 90-007 (E.C. Buehrer), 1061 Eastshore Hwy., Albany, CA
Analyzed : 05/05/92
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample A (BD0228-1A) & Sample B (BD0228-1B)	Soil	Mike Kitko	04/29/92	04/29/92

CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
TOTAL SEMIVOLATILE PETROLEUM HYDROCARBONS				1,2
Total Petroleum Hydrocarbons		200.	ND	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/04/92 by TJD using EPA 3510
(2) Sample was extracted on 4/30/92 by JDS using EPA 1311 (TCLP).

05/07/92
MSD5/DE15A
MH/lap/dsp
IE04M510

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division (707) 747-2757
6006 Egret Court, Benicia, California 94510 FAX (707)747-2765

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

Lab Number : BD-0228-2
Project : 90-007 (E.C. Buehrer), 1061 Eastshore Hwy., Albany, C
Analyzed : 05/05/92
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample C (BD0228-2A) & Sample D (BD0228-2B)	Soil	Mike Kitko	04/29/92	04/29/92

CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
TOTAL SEMIVOLATILE PETROLEUM HYDROCARBONS				1,2
Total Petroleum Hydrocarbons		200.	ND	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/04/92 by LAP using EPA 3510
(2) Sample was extracted on 4/30/92 by JDS using EPA 1311 (TCLP).

05/07/92
MSD5/DE16A
MH/lap/dsp
IE04M510

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0228-1
Project : 90-007 (E.C. Buehrer), 1061 Eastshore Hwy., Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample A (BD0228-1A) & Sample B (BD0228-1B)	Soil	Mike Kitko	04/29/92	04/29/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Antimony, Soluble	0.05	0.09	mg/L	EPA 7041	05/11/92	RJ	1
Arsenic, Soluble	0.05	0.23	mg/L	EPA 7060	05/11/92	RJ	1
CAL WET extraction with citrate				CAC T22	05/07/92	JB	2
Lead, Soluble	0.02	3.2	mg/L	EPA 7420	05/11/92	AS	1
Mercury, Soluble	0.001	ND	mg/L	EPA 7470	05/11/92	AS	3
Molybdenum, Soluble	0.1	ND	mg/L	EPA 7480	05/11/92	AS	1
Selenium, Soluble	0.05	ND	mg/L	EPA 7740	05/11/92	RJ	1
Silver, Soluble	0.005	0.048	mg/L	EPA 7760	05/11/92	AS	4
TCLP extraction procedure				EPA 1311	04/30/92	JS	
Thallium, Soluble	0.05	ND	mg/L	EPA 7840	05/11/92	AS	1

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3020
(2) Sample Preparation on 05/07/92 by JPB
(3) Sample Preparation on 05/11/92 by JPB
(4) Sample Preparation on 05/09/92 by JPB using EPA 3010

05/27/92

MH/rwj/bac/jpb

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : ED-0228-1
Project : 90-007 (E.C. Buehrer), 1061 Eastshore Hwy., Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample A (ED0228-1A) & Sample B (ED0228-1B)	Soil	Mike Kitko	04/29/92	04/29/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAM METALS BY ICP							1
Barium, Soluble	0.01	6.6	mg/L	EPA 6010	05/11/92	RJ	
Beryllium, Soluble	0.01	0.02	mg/L	EPA 6010	05/11/92	RJ	
Cadmium, Soluble	0.05	ND	mg/L	EPA 6010	05/11/92	RJ	
Chromium, Soluble	0.05	0.61	mg/L	EPA 6010	05/11/92	RJ	
Cobalt, Soluble	0.05	0.38	mg/L	EPA 6010	05/11/92	RJ	
Copper, Soluble	0.05	0.37	mg/L	EPA 6010	05/11/92	RJ	
Nickel, Soluble	0.05	0.97	mg/L	EPA 6010	05/11/92	RJ	
Vanadium, Soluble	0.02	0.92	mg/L	EPA 6010	05/11/92	RJ	
Zinc, Soluble	0.05	3.7	mg/L	EPA 6010	05/11/92	RJ	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3020

05/27/92

MH/rwj/bac/jpb

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTE
Silver, Soluble	0.005	0.071	mg/L	EPA 7760	05/11/92	AS	1

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3010

05/27/92

MH
BD0228-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE	Solid			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Antimony, Soluble	0.09	0.20	0.32	115.	mg/L	EPA 7041	05/11/92	RJ	1
Arsenic, Soluble	0.23	0.20	0.21	-10.	mg/L	EPA 7060	05/11/92	RJ	1
Lead, Soluble	3.2	4.0	6.7	88.	mg/L	EPA 7420	05/11/92	AS	1
Molybdenum, Soluble	ND	10.	11.	110.	mg/L	EPA 7480	05/11/92	AS	1
Selenium, Soluble	ND	0.20	0.19	95.	mg/L	EPA 7740	05/11/92	RJ	1
Silver, Soluble	0.048	0.50	0.52	94.	mg/L	EPA 7760	05/11/92	AS	2
Thallium, Soluble	ND	1.0	1.0	100.	mg/L	EPA 7840	05/11/92	AS	1
CAM METALS BY ICP									1
Barium, Soluble	6.6	10.	14.	74.	mg/L	EPA 6010	05/11/92	RJ	
Beryllium, Soluble	0.02	1.0	1.0	98.	mg/L	EPA 6010	05/11/92	RJ	
Cadmium, Soluble	ND	1.0	0.89	89.	mg/L	EPA 6010	05/11/92	RJ	
Chromium, Soluble	0.61	1.0	1.5	89.	mg/L	EPA 6010	05/11/92	RJ	
Cobalt, Soluble	0.38	1.0	1.3	92.	mg/L	EPA 6010	05/11/92	RJ	
Copper, Soluble	0.37	1.0	1.3	93.	mg/L	EPA 6010	05/11/92	RJ	
Nickel, Soluble	0.97	1.0	2.0	103.	mg/L	EPA 6010	05/11/92	RJ	
Vanadium, Soluble	0.92	1.0	1.9	98.	mg/L	EPA 6010	05/11/92	RJ	
Zinc, Soluble	3.7	1.0	5.1	140.	mg/L	EPA 6010	05/11/92	RJ	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3020
(2) Sample Preparation on 05/09/92 by JPB using EPA 3010

05/27/92

MH/rwj/bac/jpb
BD0228-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE DUPLICATE	Solid			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Antimony, Soluble	0.09	0.20	0.31	4.4	mg/L	EPA 7041	05/11/92	RJ	1
Arsenic, Soluble	0.23	0.20	0.19	-67.	mg/L	EPA 7060	05/11/92	RJ	1
Lead, Soluble	3.2	4.0	6.6	2.9	mg/L	EPA 7420	05/11/92	AS	1
Molybdenum, Soluble	ND	10.	12.	8.7	mg/L	EPA 7480	05/11/92	AS	1
Selenium, Soluble	ND	0.20	0.20	5.1	mg/L	EPA 7740	05/11/92	RJ	1
Silver, Soluble	0.048	0.50	0.52	0.	mg/L	EPA 7760	05/11/92	AS	2
Thallium, Soluble	ND	1.0	1.1	9.5	mg/L	EPA 7840	05/11/92	AS	1
CAM METALS BY ICP									1
Barium, Soluble	6.6	10.	13.	14.	mg/L	EPA 6010	05/11/92	RJ	
Beryllium, Soluble	0.02	1.0	0.95	5.2	mg/L	EPA 6010	05/11/92	RJ	
Cadmium, Soluble	ND	1.0	0.88	1.1	mg/L	EPA 6010	05/11/92	RJ	
Chromium, Soluble	0.61	1.0	1.5	0.	mg/L	EPA 6010	05/11/92	RJ	
Cobalt, Soluble	0.38	1.0	1.3	0.	mg/L	EPA 6010	05/11/92	RJ	
Copper, Soluble	0.37	1.0	1.3	0.	mg/L	EPA 6010	05/11/92	RJ	
Nickel, Soluble	0.97	1.0	1.9	10.	mg/L	EPA 6010	05/11/92	RJ	
Vanadium, Soluble	0.92	1.0	1.8	11.	mg/L	EPA 6010	05/11/92	RJ	
Zinc, Soluble	3.7	1.0	5.0	7.4	mg/L	EPA 6010	05/11/92	RJ	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3020
(2) Sample Preparation on 05/09/92 by JPB using EPA 3010

05/27/92

MH/rwj/bac/jpb
BD0228-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0228-2
Project : 90-007 (E.C. Buehrer), 1061 Eastshore Hwy., Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample C (BD0228-2A) & Sample D (BD0228-2B)	Soil	Mike Kitko	04/29/92	04/29/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Antimony, Soluble	0.05	0.10	mg/L	EPA 7041	05/11/92	RJ	1
Arsenic, Soluble	0.05	0.25	mg/L	EPA 7060	05/11/92	RJ	1
CAL WET extraction with citrate				CAC T22	05/07/92	JB	2
Lead, Soluble	0.02	3.4	mg/L	EPA 7420	05/11/92	AS	1
Mercury, Soluble	0.001	ND	mg/L	EPA 7470	05/11/92	AS	3
Molybdenum, Soluble	0.1	0.12	mg/L	EPA 7480	05/11/92	AS	1
Selenium, Soluble	0.05	ND	mg/L	EPA 7740	05/11/92	RJ	1
Silver, Soluble	0.005	0.047	mg/L	EPA 7760	05/11/92	AS	4
TCLP extraction procedure				EPA 1311	04/30/92	JS	
Thallium, Soluble	0.05	ND	mg/L	EPA 7840	05/11/92	AS	1

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3020
(2) Sample Preparation on 05/07/92 by JPB
(3) Sample Preparation on 05/11/92 by JPB
(4) Sample Preparation on 05/09/92 by JPB using EPA 3010

05/27/92

MH/rwj/bac

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Haylicek, Ph.D.
President

COAST · TO · COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : ED-0228-2
Project : 90-007 (E.C. Buehrer), 1061 Eastshore Hwy., Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample C (ED0228-2A) & Sample D (ED0228-2B)	Soil	Mike Kitko	04/29/92	04/29/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAM METALS BY ICP							1
Barium, Soluble	0.01	8.8	mg/L	EPA 6010	05/11/92	RJ	
Beryllium, Soluble	0.01	0.03	mg/L	EPA 6010	05/11/92	RJ	
Cadmium, Soluble	0.05	ND	mg/L	EPA 6010	05/11/92	RJ	
Chromium, Soluble	0.05	0.60	mg/L	EPA 6010	05/11/92	RJ	
Cobalt, Soluble	0.05	0.82	mg/L	EPA 6010	05/11/92	RJ	
Copper, Soluble	0.05	0.77	mg/L	EPA 6010	05/11/92	RJ	
Nickel, Soluble	0.05	1.7	mg/L	EPA 6010	05/11/92	RJ	
Vanadium, Soluble	0.02	1.3	mg/L	EPA 6010	05/11/92	RJ	
Zinc, Soluble	0.05	5.0	mg/L	EPA 6010	05/11/92	RJ	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3020

05/27/92

MH/rwj/bac

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE	Solid			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Mercury, Soluble	ND	0.050	0.054	108.	mg/L	EPA 7470	05/11/92	AS	1

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/11/92 by JPB

05/27/92

MH
BDO228-2

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE DUPLICATE	Solid			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Mercury, Soluble	ND	0.050	0.054	0.	mg/L	EPA 7470	05/11/92	AS	1

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/11/92 by JPB

05/27/92

MH
ED0228-2

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

Phone (916) 782 2110
FAX (916) 786-7830

AEGIS Environmental Consultants, Inc.

Sample Identification/Field Chain of Custody Record

Send results to:
Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

BD0228

Site Address: 1061 Eastshore Hwy, Albany, CA

AEGIS Project #: 90-007 (Eastshore)

Shipped By: M. [illegible]

Shipped To:

Project Manager: D. [illegible]

For Shell Projects Only

WIC:

AFE:

CT/DL:

Shell Engineer:

Hazardous Materials Suspected? (yes/no)

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required
[illegible]	[illegible]	Sample A	[illegible]	[illegible]	1	STLC [illegible]
↓	↓	Sample B	[illegible]	↓	1	STLC [illegible]
		Sample C	[illegible]		1	STLC [illegible]
		Sample D	[illegible]		1	STLC [illegible]

Sampler(s) (signature) [illegible]

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments

Sealed for shipment by: (signature) [illegible] Date/Time: [illegible] Shipment Method:

Received for Lab by: (signature) Date/Time: Comments: [illegible]

[illegible]

Receiving Laboratory: Please return original form after signing for receipt of samples.

White/Original Yellow/Lab Copy Pink/File Copy

COAST · TO · COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : ED-0228-2
Project : 90-007 (E.C. Buehrer), 1061 Eastshore Hwy., Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample C (ED0228-2A) & Sample D (ED0228-2B)	Soil	Mike Kitko	04/29/92	04/29/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAM METALS BY ICP							1
Barium, Soluble	0.01	8.8	mg/L	EPA 6010	05/11/92	RJ	
Beryllium, Soluble	0.01	0.03	mg/L	EPA 6010	05/11/92	RJ	
Cadmium, Soluble	0.05	ND	mg/L	EPA 6010	05/11/92	RJ	
Chromium, Soluble	0.05	0.60	mg/L	EPA 6010	05/11/92	RJ	
Cobalt, Soluble	0.05	0.82	mg/L	EPA 6010	05/11/92	RJ	
Copper, Soluble	0.05	0.77	mg/L	EPA 6010	05/11/92	RJ	
Nickel, Soluble	0.05	1.7	mg/L	EPA 6010	05/11/92	RJ	
Vanadium, Soluble	0.02	1.3	mg/L	EPA 6010	05/11/92	RJ	
Zinc, Soluble	0.05	5.0	mg/L	EPA 6010	05/11/92	RJ	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3020

05/13/92

MH/rwj/bac

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0228-2
Project : 90-007 (E.C. Buehrer), 1061 Eastshore Hwy., Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample C (BD0228-2A) & Sample D (BD0228-2B)	Soil	Mike Kitko	04/29/92	04/29/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Antimony, Soluble	0.05	0.10	mg/L	EPA 7041	05/11/92	RJ	1
Arsenic, Soluble	0.05	0.25	mg/L	EPA 7060	05/11/92	RJ	1
CAL WET extraction with citrate				CAC T22	05/07/92	JB	2
Lead, Soluble	0.02	3.4	mg/L	EPA 7420	05/11/92	AS	1
Mercury, Soluble	0.001	ND	mg/L	EPA 7470	05/11/92	AS	3
Molybdenum, Soluble	0.1	0.12	mg/L	EPA 7480	05/11/92	AS	1
Selenium, Soluble	0.05	ND	mg/L	EPA 7740	05/11/92	RJ	1
Silver, Soluble	0.005	0.047	mg/L	EPA 7760	05/11/92	AS	4
TCLP extraction procedure				EPA 1311	04/30/92	JS	
Thallium, Soluble	0.05	ND	mg/L	EPA 7840	05/11/92	AS	1

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3020
(2) Sample Preparation on 05/07/92 by JPB
(3) Sample Preparation on 05/11/92 by JPB
(4) Sample Preparation on 05/09/92 by JPB using EPA 3010

05/13/92

MH/rwj/bac

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401

(805) 543-2553
FAX (805) 543-2685

Lab Number : BD-0228-1
Project : 90-007 (E.C. Buehrer),
1061 Eastshore Hwy., Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample A (BD0228-1A) & Sample B (BD0228-1B)	Soil	Mike Kitko	04/29/92	04/29/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAM METALS BY ICP							1
Barium, Soluble	0.01	6.6	mg/L	EPA 6010	05/11/92	RJ	
Beryllium, Soluble	0.01	0.02	mg/L	EPA 6010	05/11/92	RJ	
Cadmium, Soluble	0.05	ND	mg/L	EPA 6010	05/11/92	RJ	
Chromium, Soluble	0.05	0.61	mg/L	EPA 6010	05/11/92	RJ	
Cobalt, Soluble	0.05	0.38	mg/L	EPA 6010	05/11/92	RJ	
Copper, Soluble	0.05	0.37	mg/L	EPA 6010	05/11/92	RJ	
Nickel, Soluble	0.05	0.97	mg/L	EPA 6010	05/11/92	RJ	
Vanadium, Soluble	0.02	0.92	mg/L	EPA 6010	05/11/92	RJ	
Zinc, Soluble	0.05	3.7	mg/L	EPA 6010	05/11/92	RJ	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3020

05/13/92

MH/rwj/bac/jpb

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : ED-0228-1
Project : 90-007 (E.C. Buehrer), 1061 Eastshore Hwy., Albany, C

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample A (ED0228-1A) & Sample B (ED0228-1B)	Soil	Mike Kitko	04/29/92	04/29/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Antimony, Soluble	0.05	0.09	mg/L	EPA 7041	05/11/92	RJ	1
Arsenic, Soluble	0.05	0.23	mg/L	EPA 7060	05/11/92	RJ	1
CAL WET extraction with citrate				CAC T22	05/07/92	JB	2
Lead, Soluble	0.02	3.2	mg/L	EPA 7420	05/11/92	AS	1
Mercury, Soluble	0.001	ND	mg/L	EPA 7470	05/11/92	AS	3
Molybdenum, Soluble	0.1	ND	mg/L	EPA 7480	05/11/92	AS	1
Selenium, Soluble	0.05	ND	mg/L	EPA 7740	05/11/92	RJ	1
Silver, Soluble	0.005	0.048	mg/L	EPA 7760	05/11/92	AS	4
TCLP extraction procedure				EPA 1311	04/30/92	JS	
Thallium, Soluble	0.05	ND	mg/L	EPA 7840	05/11/92	AS	1

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/09/92 by JPB using EPA 3020
(2) Sample Preparation on 05/07/92 by JPB
(3) Sample Preparation on 05/11/92 by JPB
(4) Sample Preparation on 05/09/92 by JPB using EPA 3010

05/13/92

MH/rwj/bac/jpb

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

APPENDIX C

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS: UST EXCAVATION SAMPLES

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707) 747-2765

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

Lab Number : BD-0247-1
Project : 90-007 1061 Eastshore Hwy, Albany, CA
Analyzed : 05/07/92
Analyzed by: AZ
Method : As Listed

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #8 Underground Storage Tank - Excavaton Area	Aqueous	Mike Kitko	05/05/92	05/06/92

CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.5	ND	
Toluene	(108883)	0.5	ND	
Ethylbenzene	(100411)	0.5	ND	
Xylenes		0.5	28.	
1,2-Dichloroethane (EDC)	(107062)	0.5	ND	
Ethylene Dibromide (EDB)	(106934)	0.5	ND	
Total Petroleum Hydrocarbons (Gasoline)		50.	100.	
Total Petroleum Hydrocarbons (Diesel 2)		50.	ND	
BTX as a percent of fuel			28.	
1,2-Dichloroethane-d4 (Surrogate)			37.4	
Toluene-d8 (Surrogate)			36.8	
p-Bromofluorobenzene (Surrogate)			36.3	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 40.0ug/L

05/13/92
INCOS 50-387
MH/trk/htc
BDE07I1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707)747-2765

Lab Number : BD-0247-1
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #8 Underground Storage Tank - Excavaton Area	Aqueous	Mike Kitko	05/05/92	05/06/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Cadmium, Total	0.005	0.010	mg/L	EPA 7130	05/14/92	JG	1
Chromium, Total	0.005	0.005	mg/L	EPA 7191	05/14/92	MM	1
Lead, Total	0.005	0.023	mg/L	EPA 7421	05/13/92	MM	1
Nickel, Total	0.005	0.053	mg/L	EPA 7521	05/13/92	MM	1
Zinc, Total	0.050	ND	mg/L	EPA 7950	05/11/92	MM	1

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/06/92 by JBG using EPA 3020

05/19/92
PE 360
MH/mje/htc
BDE06M1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0247-1
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #8 Underground Storage Tank - Excavaton Area	Aqueous	Mike Kitko	05/05/92	05/06/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	3.	21.	mg/L	EPA 413.1	05/12/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
IE12HO

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707)747-2765

QC Batch ID: BDE07I1

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 05/07/92
Analyzed by: AZ
Method : As Listed

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Aqueous			

CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
FUEL FINGERPRINT ANALYSIS				1,2,3
Benzene	(71432)	0.5	ND	
Toluene	(108883)	0.5	ND	
Ethylbenzene	(100411)	0.5	ND	
Xylenes		0.5	ND	
1,2-Dichloroethane (EDC)	(107062)	0.5	ND	
Ethylene Dibromide (EDB)	(106934)	0.5	ND	
Total Petroleum Hydrocarbons (Gasoline)		50.	ND	
Total Petroleum Hydrocarbons (Diesel 2)		50.	ND	
BTX as a percent of fuel			Not Appl.	
1,2-Dichloroethane-d4 (Surrogate)			37.4	
Toluene-d8 (Surrogate)			38.0	
p-Bromofluorobenzene (Surrogate)			35.8	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)
(3) Surrogates were spiked at 40.0ug/L

05/13/92
INCOS 50-387
MH/trk/htc
ED0247-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707)747-2765

RECEIVED
MAY 2 7 1992
Ans'd. PKG...
G0007

QC Batch ID: BDE07I1

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 05/07/92
Analyzed by: AZ
Method : As Listed

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE DUPLICATE	Aqueous			

CONSTITUENT	*PQL µg/L	SPIKE AMOUNT	RESULT µg/L	%REC	%DIFF	NOTE
FUEL FINGERPRINT ANALYSIS						1,2
Benzene	0.5	180.	160.	89.	6.1	
Toluene	0.5	720.	660.	92.	4.4	
Ethylbenzene	0.5	160.	140.	88.	0.	
Xylenes	0.5	780.	720.	92.	9.3	
1,2-Dichloroethane (EDC)	0.5		NS			
Ethylene Dibromide (EDB)	0.5		NS			
Total Petroleum Hydrocarbons (Gasoline)	50.	7100.	6000.	85.	6.5	
Total Petroleum Hydrocarbons (Diesel 2)	50.		NS			
BTX as a percent of fuel		24.	26.			
1,2-Dichloroethane-d4 (Surrogate)		40.0	39.3	98.	2.8	
Toluene-d8 (Surrogate)		40.0	39.6	99.	5.2	
p-Bromofluorobenzene (Surrogate)		40.0	38.7	97.	5.3	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
* RESULTS listed as 'NS' were not spiked. PQL = Practical Quantitation Limit
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)

05/11/92
INCOS 50-387
MH/trk/htc
BD0247-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707) 747-2765

QC Batch ID: BDE07I1

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 05/07/92
Analyzed by: AZ
Method : As Listed

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE	Aqueous			

CONSTITUENT	*PQL µg/L	SPIKE AMOUNT	RESULT µg/L	%REC	NOTE
FUEL FINGERPRINT ANALYSIS					1,2
Benzene	0.5	180.	170.	94.	
Toluene	0.5	720.	690.	96.	
Ethylbenzene	0.5	160.	140.	88.	
Xylenes	0.5	780.	790.	101.	
1,2-Dichloroethane (EDC)	0.5		NS		
Ethylene Dibromide (EDB)	0.5		NS		
Total Petroleum Hydrocarbons (Gasoline)	50.	7100.	6400.	90.	
Total Petroleum Hydrocarbons (Diesel 2)	50.		NS		
BTX as a percent of fuel		24.	26.		
1,2-Dichloroethane-d4 (Surrogate)		40.0	38.2	96.	
Toluene-d8 (Surrogate)		40.0	41.7	104.	
p-Bromofluorobenzene (Surrogate)		40.0	36.7	92.	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
* RESULTS listed as 'NS' were not spiked. PQL = Practical Quantitation Limit
(1) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)
(2) EXTRACTED by EPA 5030 (purge-and-trap)

05/11/92
INCOS 50-387
MH/trk/htc
ED0247-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Haylicek

Mary Haylicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707) 747-2765

QC Batch ID: BDE06M1

CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Aqueous			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTE
Cadmium, Total	0.005	ND	mg/L	EPA 7130	05/14/92	JG	1
Chromium, Total	0.005	ND	mg/L	EPA 7191	05/14/92	MM	1
Lead, Total	0.005	ND	mg/L	EPA 7421	05/13/92	MM	1
Nickel, Total	0.005	ND	mg/L	EPA 7521	05/13/92	MM	1
Zinc, Total	0.050	ND	mg/L	EPA 7950	05/11/92	MM	1

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/06/92 by JBG using EPA 3020

05/19/92
PE 360
MH/mje/htc
BD0247-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707) 747-2765

QC Batch ID: BDE06M1

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE	Aqueous			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Cadmium, Total	0.010	0.020	0.030	100.	mg/L	EPA 7130	05/14/92	JG	1
Chromium, Total	0.005	0.10	0.093	88.	mg/L	EPA 7191	05/14/92	MM	1
Lead, Total	0.023	0.10	0.14	117.	mg/L	EPA 7421	05/13/92	MM	1
Nickel, Total	0.053	0.50	0.46	81.	mg/L	EPA 7521	05/13/92	MM	1
Zinc, Total	ND	1.0	0.97	97.	mg/L	EPA 7950	05/11/92	MM	1

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/06/92 by JBG using EPA 3020

05/19/92
PE 360
MH/mje/htc
BD0247-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707)747-2765

QC Batch ID: BDE06M1

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE DUPLICATE	Aqueous			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Cadmium, Total	0.010	0.020	0.029	5.1	mg/L	EPA 7130	05/14/92	JG	1
Chromium, Total	0.005	0.10	0.097	4.4	mg/L	EPA 7191	05/14/92	MM	1
Lead, Total	0.023	0.10	0.15	8.2	mg/L	EPA 7421	05/13/92	MM	1
Nickel, Total	0.053	0.50	0.43	7.7	mg/L	EPA 7521	05/13/92	MM	1
Zinc, Total	ND	1.0	0.99	2.	mg/L	EPA 7950	05/11/92	MM	1

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/06/92 by JBG using EPA 3020

05/19/92
PE 360
MH/mje/htc
BD0247-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division
6006 Egret Court, Benicia, California 94510

(707) 747-2757
FAX (707) 747-2765

QC Batch ID: BDE06M1

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE	Aqueous			

CONSTITUENT	*PQL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Cadmium, Total	0.005	0.020	0.021	105.	mg/L	EPA 7130	05/14/92	JG	1,2
Chromium, Total	0.005	0.10	0.11	110.	mg/L	EPA 7191	05/14/92	MM	1
Lead, Total	0.005	0.10	0.12	120.	mg/L	EPA 7421	05/13/92	MM	1
Nickel, Total	0.005	0.50	0.41	82.	mg/L	EPA 7521	05/13/92	MM	1
Zinc, Total	0.050	1.0	1.0	100.	mg/L	EPA 7950	05/11/92	MM	1

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 05/06/92 by JBG using EPA 3020
(2) Spike was in analyte-free water.

05/19/92
PE 360
MH/mje/htc
BD0247-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

QC Batch ID: IE12HO

CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Aqueous			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTE
Oil & Grease	3.	ND	mg/L	EPA 413.1	05/12/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
ED0247-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401

(805) 543-2553
FAX (805) 543-2685

QC Batch ID: IE12HO

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE	Aqueous			

CONSTITUENT	*PQL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Oil & Grease	3.	23.	17.	74.	mg/L	EPA 413.1	05/12/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
ED0247-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

QC Batch ID: IE12HO

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE DUPLICATE	Aqueous			

CONSTITUENT	*PQL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Oil & Grease	3.	23.	16.	6.1	mg/L	EPA 413.1	05/12/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
ED0247-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

Phone (916) 782 2110
FAX (916) 786-7830

AEGIS Environmental Consultants, Inc.
Sample Identification/Field Chain of Custody Record

Send results to:
Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

[illegible] [illegible]

Site Address: 1061 Eastshore Hwy, Albany, CA
AEGIS Project #: 90-007
Shipped By: M. Kitko
Shipped To: Coast to coast Analytical Services
Project Manager: P. Graff

For Shell Projects Only
WIC:
AFE:
CT/DL:
Shell Engineer:
Hazardous Materials Suspected? (yes/no) — "yes" circled

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required
5 feet bgs (bottom)	Underground Storage Tank Excavation Area	Sample # 8	May 5, 1992	liter/Water	1	Fuel Fingerprint 8260 * Total oil and Grease
3 feet bgs (side)	southwall of excavation	# 9	↓	brass/soil	1	Total oil and Grease
↓	↓	# 10	↓	↓	↓	↓
↓	↓	# 11	↓	↓	↓	↓
↓	↓	# 12	↓	↓	↓	↓
↓	eastwall of excavation	# 13	↓	↓	↓	↓
↓	↓	# 14	↓	↓	↓	↓

Sampler(s) (signature): Michael Kitko

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
	Michael Kitko	[signature]	5/5/92	16:55	
	[signature] 5/5/92 1730				

Sealed for shipment by: (signature) Michael Kitko Date/Time: ____ Shipment Method: Courier

Received for Lab by: (signature) ____ Date/Time: ____ Comments: Sample #8 - 5 day turn around

Samples # 9, 10, 11, 12, 13 and 14 test for Total oil and Grease with a 48 hour turn around.

* Also analyze water for total Cd, Cr, Pb, Ni, Zn ** EE SAMPLE POURED OFF OF 1 L BY LAB 5/5/92 [initials] AS REQUESTED BY MRS KITKO

Receiving Laboratory: Please return original form after signing for receipt of samples.

White/Original Yellow/Lab Copy Pink/File Copy

APPENDIX D

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORM: SOIL EXCAVATION SAMPLES

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0246-1
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #9 Southwall of Excavation	Soil	Mike Kitko	05/05/92	05/06/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	100	mg/Kg	EPA 9071	05/07/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

RECEIVED
MAY 13 1992
Ans'd. CE/PKG

05/08/92

MH/oro/cdm

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.
Mary Havlicek
Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0246-2
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #10 Southwall of Excavation	Soil	Mike Kitko	05/05/92	05/06/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	ND	mg/Kg	EPA 9071	05/07/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/08/92

MH/oro/cdm

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0246-3
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample #11 Southwall of Excavation	Soil	Mike Kitko	05/05/92	05/06/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	1700	mg/Kg	EPA 9071	05/07/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/08/92

MH/oro/cdm

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401

(805) 543-2553
FAX (805) 543-2685

Lab Number : BD-0246-4
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample #12 Southwall of Excavation	Soil	Mike Kitko	05/05/92	05/06/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	500	mg/Kg	EPA 9071	05/07/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/08/92

MH/oro/cdm

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0246-5
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #13 Eastwall of Excavation	Soil	Mike Kitko	05/05/92	05/06/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	2300	mg/Kg	EPA 9071	05/07/92	CM	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/08/92

MH/oro/cdm

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401

(805) 543-2553
FAX (805) 543-2685

Lab Number : BD-0246-6
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample #14 Eastwall of Excavation	Soil	Mike Kitko	05/05/92	05/06/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	800	mg/Kg	EPA 9071	05/07/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/08/92

MH/oro/cdm

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

Phone (916) 782 2110
FAX (916) 786-7830

AEGIS Environmental Consultants, Inc.
Sample Identification/Field Chain of Custody Record

Send results to:
Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

For Shell Projects Only

Site Address: 1061 Eastshore Hwy, Albany, CA
AEGIS Project #: 90-007
Shipped By: M. Kitko
Shipped To: Coast to coast Analytical Services
Project Manager: P. Graff

WIC:
AFE:
CT/DL:
Shell Engineer:
Hazardous Materials Suspected? (yes/no) — yes circled

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required
5 feet bgs (bottom)	Underground Storage Tank Excavation Area	Sample # 8	May 5, 1992	Liter/Water	1	Fuel Fingerprint 8260 * Total oil and Grease
3 feet bgs (side)	southwall of excavation	# 9	↓	brass/soil	1	Total oil and Grease
↓	↓	# 10	↓	↓	↓	↓
↓	↓	# 11	↓	↓	↓	↓
↓	↓	# 12	↓	↓	↓	↓
↓	eastwall of excavation	# 13	↓	↓	↓	↓
↓	↓	# 14	↓	↓	↓	↓

Sampler(s) (signature) Michael Kitko

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
	Michael Kitko	[signature]	5/5/92	16:35	
	[signature] 5/5/92 17:30				

Sealed for shipment by: (signature) Michael Kitko Date/Time: Shipment Method: Courier

Received for Lab by: (signature) Date/Time: Comments: Sample #8 - 5 day turn around
Samples # 9, 10, 11, 12, 13 and 14 test for Total oil and Grease with a 48 hour turn around.
* Also analyze water for total Cd, Cr, Pb, Ni, Zn ** EE SAMPLE POURED OFF OF 1 L BY LAB 5/5/92 [illegible] AS REQUESTED BY MIKE KITKO

Receiving Laboratory: Please return original form after signing for receipt of samples.

White/Orig. 3 Yellow/Lab Copy Pink/File Copy

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories
San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401
(805) 543-2553
FAX (805) 543-2685

MAY 19 1992
Ans'd. PKG

Lab Number : BD-0250-1
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #15 West Side Wall	Soil	Mike Kitko	05/06/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	240.	mg/Kg	EPA 9071	05/07/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
IE08HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401

(805) 543-2553
FAX (805) 543-2685

Lab Number : BD-0250-2
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #16 West Side Wall	Soil	Mike Kitko	05/06/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	210.	mg/Kg	EPA 9071	05/07/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
IE08HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0252-2
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #21 North Side Wall	Soil	Mike Kitko	05/07/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	3000.	mg/Kg	EPA 9071	05/08/92	CM	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
IE08HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0252-3
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #22 North Side Wall	Soil	Mike Kitko	05/07/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	3000.	mg/Kg	EPA 9071	05/08/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
IE09HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Haylicek

Mary Haylicek, Ph.D.
President

COAST · TO · COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

QC Batch ID: IE09HOS

CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTE
Oil & Grease	50.	ND	mg/Kg	EPA 9071	05/08/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
BD0252-3

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

QC Batch ID: IE09HOS

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE DUPLICATE	Solid			

CONSTITUENT	*PQL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Oil & Grease	50.	380.	360.	5.4	mg/Kg	EPA 9071	05/08/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
ED0252-3

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

QC Batch ID: IE09HOS

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE	Solid			

CONSTITUENT	*PQL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Oil & Grease	50.	380.	380.	100.	mg/Kg	EPA 9071	05/08/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
ED0252-3

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Haylicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401

(805) 543-2553
FAX (805) 543-2685

Lab Number : BD-0252-4
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #23 North Side Wall	Soil	Mike Kitko	05/07/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	840.	mg/Kg	EPA 9071	05/08/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
IE09HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0252-5
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #24 East Side Wall	Soil	Mike Kitko	05/07/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	700.	mg/Kg	EPA 9071	05/08/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/ora/tmw
IE09HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0252-6
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #25 South Side Wall	Soil	Mike Kitko	05/07/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	620.	mg/Kg	EPA 9071	05/08/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
IE09HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

Phone (916) 782 2110
FAX (916) 786-7830

AEGIS Environmental Consultants, Inc.

Sample Identification/Field Chain of Custody Record

Send results to:
Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

5D0252

Site Address: 1061 Eastshore Hwy, Albany, CA
AEGIS Project #: 90-007
Shipped By: M. Kitko
Shipped To: Coast to Coast Analytical Services
Project Manager: P. Greff

For Shell Projects Only
WIC:
AFE:
CT/DL:
Shell Engineer:
Hazardous Materials Suspected? (yes/no)

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required	
3 feet below surface	North side wall	Sample #20	May 07, 1992	brass/soil	1	Total Oil & Grease	-1
		#21					-2
		#22					-3
		#23					-4
	East side wall	#24					-5
	South side wall	#25					-6

Sampler(s) (signature) Michael Kitko

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
	Michael Kitko	Brenda D. Kelly	5/7/92	11:00	

Sealed for shipment by: (signature) Michael Kitko Date/Time: 05/07/92 11:00a Shipment Method: Courier

Received for Lab by: (signature) Date/Time: Comments: 48-hour turn-around.

Receiving Laboratory: Please return original form after signing for receipt of samples.

White/Original Yellow/Lab Copy Pink/File Copy

CHROMALAB, INC.

Environmental Laboratory (1094)

JUN 0 1 1992
Ans'd PRG

5 DAYS TURNAROUND

May 26, 1992 ChromaLab File No.: 0592144

AEGIS ENVIRONMENTAL

Attn: Paul Graff

RE: Three soil samples for TCLP - Motor Oil analysis

Project Location: 1061 EASTSHORE HWY, ALBANY, CA
Project Number: 90-007
Date Sampled: May 15, 1992 Date Submitted: May 15, 1992
Date Extracted: May 21, 1992 Date Analyzed: May 21, 1992

RESULTS:

Sample I.D.	TCLP Motor Oil (mg/L)
SP-1	N.D.
SP-2	N.D.
SP-3	N.D.
BLANK	N.D.
SPIKED RECOVERY	92%
DUPLICATE SPIKED RECOVERY	97%
DETECTION LIMIT	0.5
METHOD OF ANALYSIS	\3510/8015

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

May 26, 1992 ChromaLab File No.: 0592144

AEGIS ENVIRONMENTAL

Attn: Paul Graff

RE: One soil sample for Waste Extraction CAM 17 elements analysis

Project Location: 1061 EASTSHORE HWY, ALBANY, CA
Project Number: 90-007
Date Sampled: May 15, 1992 Date Submitted: May 15, 1992
Date Analyzed: May 22, 1992

RESULTS: Sample I.D. SP-2

Metals	Concentration (mg/L)	Detection Limit (mg/L)
Antimony (Sb)	0.07	0.020
Arsenic (As)	0.22	0.005
Barium (Ba)	7.6	0.005
Beryllium (Be)	N.D.	0.001
Cadmium (Cd)	0.03	0.001
Cobalt (Co)	0.43	0.01
Chromium (Cr)	0.34	0.01
Copper (Cu)	1.2	0.005
Lead (Pb)	5.3	0.010
Mercury (Hg)	0.002	0.001
Molybdenum (Mo)	0.03	0.005
Nickel (Ni)	1.0	0.020
Selenium (Se)	N.D.	0.01
Silver (Ag)	N.D.	0.005
Thallium (Tl)	N.D.	0.04
Vanadium (V)	0.97	0.01
Zinc (Zn)	18	0.005

Method of Analysis: WET/3010/6010/7000

ChromaLab, Inc.

Refaat A. Mankarious
Inorganics Supervisor

Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

May 26, 1992 ChromaLab File No.: 0592144

AEGIS ENVIRONMENTAL

Attn: Paul Graff

RE: One soil sample for Waste Extraction CAM 17 elements analysis

Project Location: 1061 EASTSHORE HWY, ALBANY, CA
Project Number: 90-007
Date Sampled: May 15, 1992 Date Submitted: May 15, 1992
Date Analyzed: May 22, 1992

RESULTS: Sample I.D. SP-1

Metals	Concentration (mg/L)	Detection Limit (mg/L)
Antimony (Sb)	0.07	0.020
Arsenic (As)	0.20	0.005
Barium (Ba)	8.6	0.005
Beryllium (Be)	0.02	0.001
Cadmium (Cd)	0.06	0.001
Cobalt (Co)	0.84	0.01
Chromium (Cr)	0.61	0.01
Copper (Cu)	0.24	0.005
Lead (Pb)	3.6	0.010
Mercury (Hg)	0.001	0.001
Molybdenum (Mo)	0.03	0.005
Nickel (Ni)	1.0	0.020
Selenium (Se)	N.D.	0.01
Silver (Ag)	N.D.	0.005
Thallium (Tl)	N.D.	0.04
Vanadium (V)	1.6	0.01
Zinc (Zn)	14	0.005

Method of Analysis: WET/3010/6010/7000

ChromaLab, Inc.

Refaat A. Mankarious
Inorganics Supervisor

Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA
Newport Beach, CA • Valparaiso, IN • Westbrook, ME

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0239-1
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #1 - Bottom of UST Excavation - 5' Below Ground Surface	Soil	Mike Kitko	05/04/92	05/05/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	230.	mg/Kg	EPA 9071	05/07/92	CM	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/08/92

MI/oro/tmw
IEOSHOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA
Newport Beach, CA • Valparaiso, IN • Westbrook, ME

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0239-2
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample #2 - Bottom of UST Excavation - 5' Below Ground Surface	Soil	Mike Kitko	05/04/92	05/05/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	230.	mg/Kg	EPA 9071	05/07/92	CM	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/08/92

MH/oro/tmw

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories
San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA
Newport Beach, CA • Valparaiso, IN • Westbrook, ME

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

Lab Number : BD-0239-3
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Sample #3 - Below Dispenser Island - 1' Bgs	Soil	Mike Kirko	05/04/92	05/05/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	170.	mg/Kg	EPA 9071	05/07/92	CM	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/08/92

MI/oro/tmw
IE08HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

Phone (916) 782 2110
FAX (916) 786-7830

AEGIS Environmental

Sample Identification/Field Ch.

CHROMALAB FILE # 5?144
ORDER # 6447

Send results to:
Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

Site Address: 1061 EASTSHORE HWY ALBANY CA
AEGIS Project #: 90-007
Shipped By: AEGIS
Shipped To: CHROMALABS
Project Manager: P. Graff "PAUL GRAFF"

For Shell Projects Only
WIC:
AFE:
CT/DL:
Shell Engineer:
Hazardous Materials Suspected? (yes/no)

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required
4 point field composite	Soil Stockpile	SP-1	5-15-92	Soil	1	STLC CAM17 metals TCLP/TPH as motor oil
↓	↓	SP-2	↓	↓	↓	STLC CAM17 metals TCLP/TPH as motor oil
↓	↓	SP-3	↓	↓	↓	TCLP/TPH as motor oil
↓	↓	SP-4	↓	↓	↓	Hold
↓	↓	SP-5	↓	↓	↓	Hold
		Rerun SP-1 & SP-2, STLC CAM17 - DI water pH				
				per Paul Graff		5/27/92

Sampler(s) (signature): [signature] "BRIAN HENDERSON"

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
SP 1 2 3 4 5	[signature]	Gary Cook	5/15/92 1:15P		5 DAY TAT

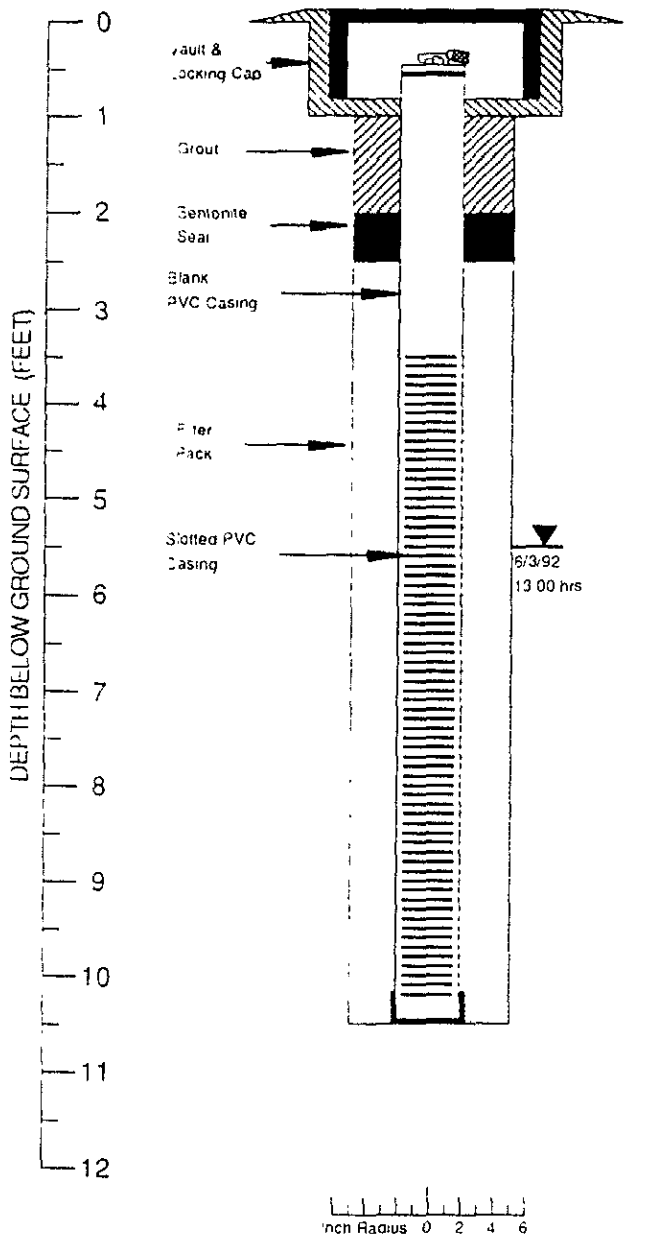
Sealed for shipment by: (signature) [signature] Date/Time: 5/15/92 12:30 PM Shipment Method: LAB PICK UP ON SITE
Received for Lab by: (signature) Gary Cook Date/Time: 5/15/92 1:15P Comments:

* 5-DAY Turnaround

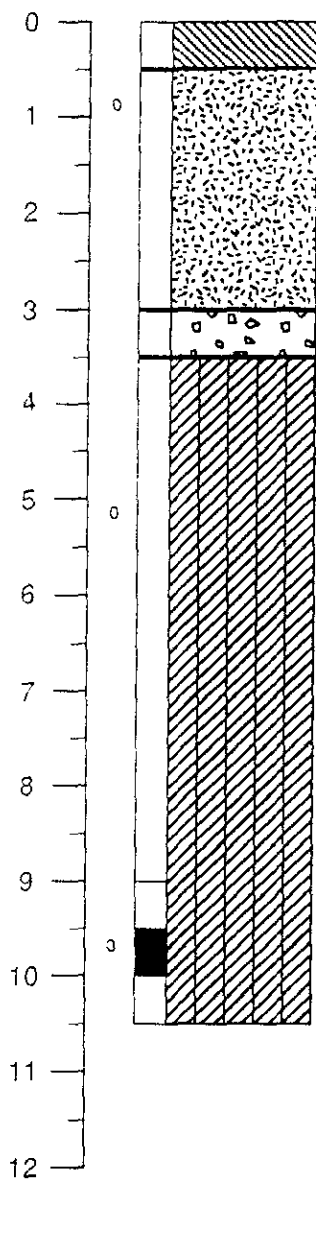
Receiving Laboratory: Please return original form after signing for receipt of samples.

White/Original Yellow/Lab Copy Pink/File Copy

WELL CONSTRUCTION DETAIL



GRAPHIC LOG



DESCRIPTION

Reinforced Concrete

SAND (SW); brownish yellow, fine grained, well graded, artificial fill, no odor

GRAVEL (GW); well graded, 2 to 6 inch diameter subangular clasts, artificial fill, no odor

Silty CLAY (CL), black, very wet, soft, sticky, medium plasticity, no odor

Total Depth = 10.5 feet

Logged by:	M. Kitko	Drilling Company	B&F Drilling	Well Head Completion	1:15 hrs
Project Mgr.	P. Gratt	Drilling Method	Mobile B-53	Type of Sampler.	Calif. Spilt Spoon
Date Drilled:	6/3/92	Driller:	Breece Franks, Breece III	TD (Total Depth):	10.5'

Explanation

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab Sample

Contacts

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K= primary 2K= secondary
- NR — No Recovery

AEGIS ENVIRONMENTAL, INC.

Well Log Monitoring Well 9	JOB NUMBER 90-007
E.C. Buehrer 1061 Eastshore Highway Albany, CA	WELL 9

APPENDIX F

COMPACTION TESTING REPORT

VECTOR
ENGINEERING, INC.

May 28, 1992
Project No. 893040.33

Mr. Paul Graff
Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

RE: Results of the Field and Laboratory Testing Services
E.C. Buehrer Project, Albany, California

Dear Mr. Graff,

As requested, we have performed the field density and related laboratory testing services during the excavation backfill, and subgrade preparation at the E.C. Buehrer project, in Albany, California. Our services were provided to determine the degree of compaction effected by the contractor in relation to the specifications that you provided.

Field density testing was performed on the excavation backfill, and subgrade soils at random locations and elevations in accordance ASTM D-3017 and ASTM D-2922. The maximum dry density and optimum moisture content of the imported soils were determined in accordance with ASTM D-1557. The results of these testing procedures are presented on Tables I and II of this text. Areas of failing density were removed or reworked by the contractor until passing test results were attained.

The scope of our services did not include any environmental assessment or investigation for the presence or absence of wetlands, hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around this site.

It has been a pleasure being of service to you on this project. If you should have any questions or need further assistance, please do not hesitate to call this office.

Respectfully Submitted,
VECTOR ENGINEERING, INC.

Richard A Holloway

Richard A. Holloway
Laboratory Manager

Reviewed By

Rick Kiel

Rick Kiel, PE
Civil Engineer No. 047477

12438 Loma Rica Dr., Suite C • Grass Valley, CA 95945 • (916) 272-2448 Fax: (916) 272-8533
CARSON CITY, NV • EL DORADO HILLS, CA

Phone (916) 782 2110
FAX (916) 786 7830

AEGIS Environmental Consultants, Inc.

Sample Identification/Field Chain of Custody Record

Send results to:
Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

3302239

Site Address: 1061 Eastshore Hwy, Albany, CA
AEGIS Project #: 90-007
Shipped By: M. Kitko
Shipped To: Coast to Coast Analytical Laboratory
Project Manager: Paul Graff

For Shell Projects Only
WIC:
AFE:
CT/DL:
Shell Engineer:
Hazardous Materials Suspected? (yes/no)

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required
5 feet below ground surface	Bottom of UST Excavation	Sample #1	May 04, 1992	Brass/soil	1	TPH Oil & grease; TPH-g, BTEX; TPH-d
5 feet below ground surface	↓	Sample #2	May 04, 1992	Brass/soil	1	
1 foot bgs	Below [redacted] dispenser Island	Sample #3	May 04, 1992	Brass/soil	1	↓
North side	Stockpile No. 1	Sample #4	May 04, 1992	Brass/soil	1	STLC for CAM 17 metals
West side	Stockpile No. 1	Sample #5	May 04, 1992	Brass/soil	1	TCLP Extraction for EPA 418.1 Analysis
East side	Stockpile No. 1	Sample #6	May 04, 1992	Brass/soil	1	STLC for CAM 17 metals [redacted]
South side	Stockpile No. 1	Sample #7	May 04, 1992	Brass/soil	1	TCLP Extraction for EPA 418.1 Analysis.

Sampler(s) (signature) [signature]

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
	[signature]	[signature]	May 04, 1992	4:45	
	[signature] 5/5/92	[signature]	5-5-92	1500	

Sealed for shipment by: (signature) [signature] Date/Time: May 04, 1992 4:45 Shipment Method: Carrier

Received for Lab by: (signature) Date/Time: Comments: Hold on Samples 4 and 5, 6, 7. Samples 4 & 6 run STLC for CAM 17 Metals. Samples 5 & 7 run TCLP Extraction for EPA 418.1 analysis. [redacted] turn-around on samples 1, 2 and 3. 5 day

O&G = Total Oil Gravimetric &
TPH-G/D = EF PIE
Paul Graff 5/5

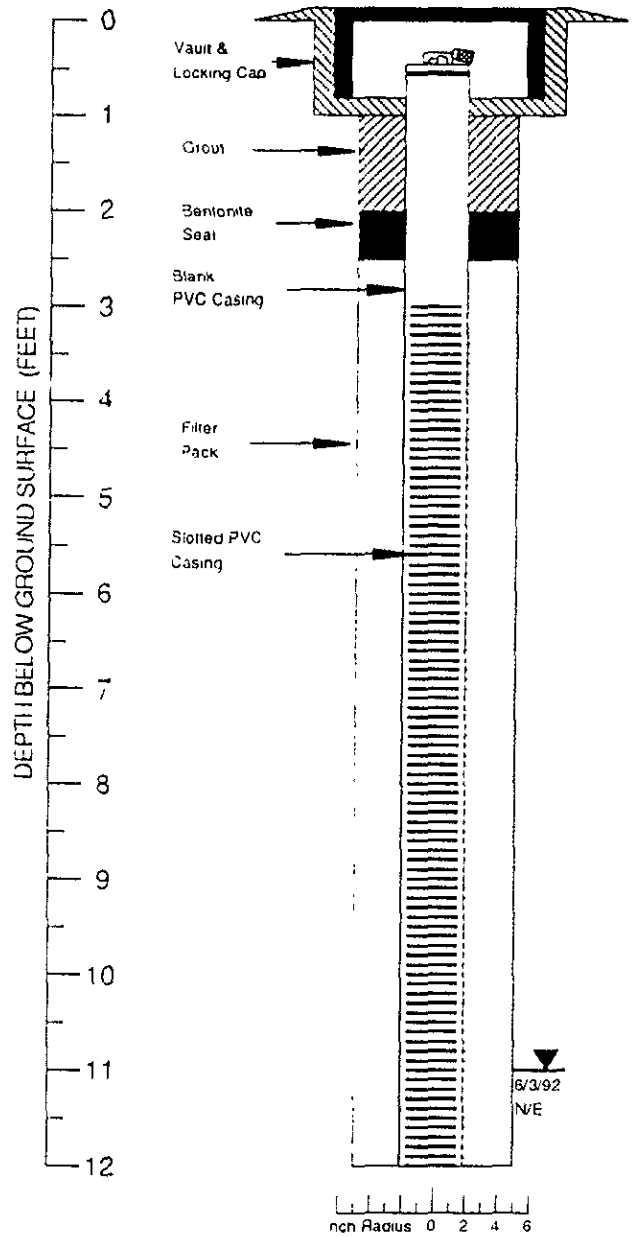
Receiving Laboratory: Please return original form after signing for receipt of samples.

White/Original Yellow/Lab Copy Pink/File Copy

APPENDIX E

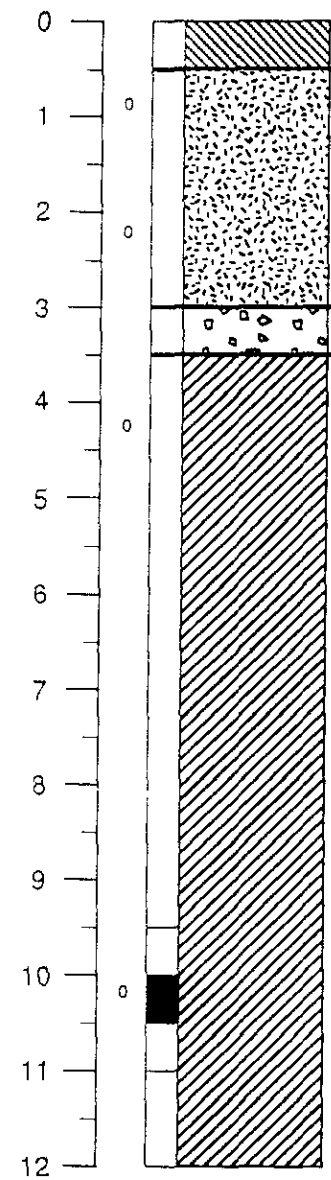
BORING LOGS

WELL CONSTRUCTION DETAIL



GRAPHIC LOG

PID (ppmv)



DESCRIPTION

Reinforced Concrete

SAND (SW); brownish yellow, fine grained, artificial fill, well graded, no odor

GRAVEL (GW); well graded, 2 to 6 inches in diameter, subangular clasts, artificial fill, no odor

CLAY (CL); grayish olive green, wet, sticky, medium plasticity, no odor

Logged by:	M. Kitko	Drilling Company:	B&F Drilling	Well Head Completion:	11:30 hrs
Project Mgr:	P. Graff	Drilling Method:	Mobile B-53	Type of Sampler:	Calif. Split Spoon
Date Drilled:	6/3/92	Driller:	Breece Franks, Breece III	TD (Total Depth):	13.5'

Explanation

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab Sample

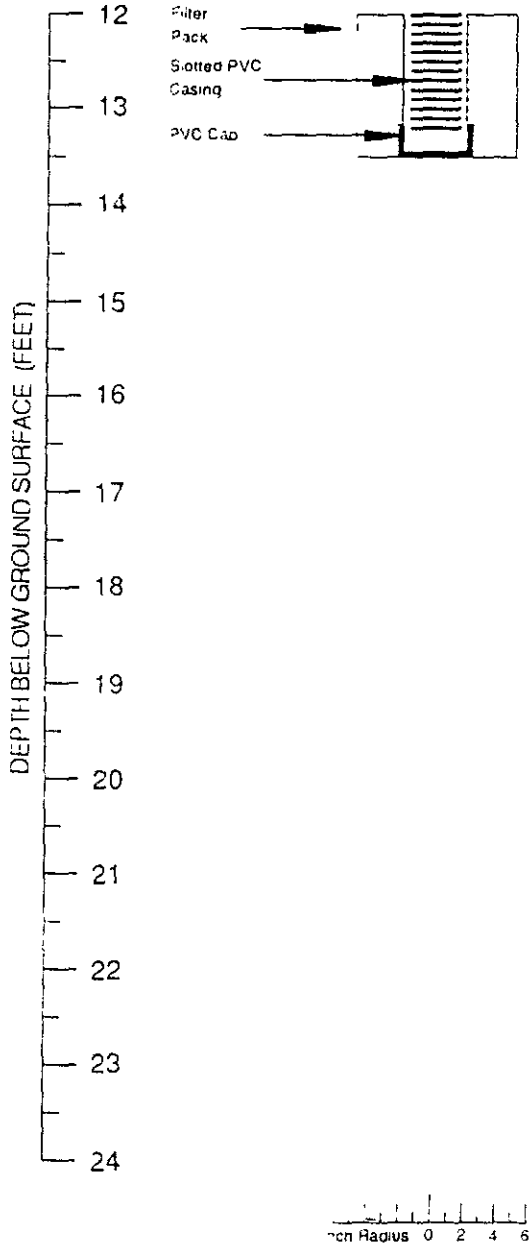
Contacts

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K= primary 2K= secondary
- NR — No Recovery

AEGIS ENVIRONMENTAL, INC.

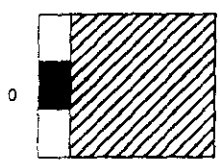
Well Log Monitoring Well 8	JOB NUMBER 90-007
E.C. Buehrer 1061 Eastshore Highway Albany, CA	WELL 8

WELL CONSTRUCTION DETAIL



GRAPHIC LOG

PID (ppmv)



DESCRIPTION

Grayish green

Total Depth = 13.5 feet

Explanation

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab Sample

Contacts

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K= primary 2K= secondary
- NR — No Recovery

AEGIS ENVIRONMENTAL, INC.

Well Log	JOB NUMBER
Monitoring Well 8	90-007
E.C. Buehrer 1061 Eastshore Highway Albany, CA	WELL 8

TABLE II

FIELD DENSITY TEST SUMMARY
ASTM D-3017/D-2922

TEST NO.	DATE	LOCATION	ELEV. (ft)	MOIST. (%)	DRY DENSITY (PCF)	MAX. DRY DENSITY (PCF)	OPT. MOIST. %	% COMPACTION	REMARKS
1	5-11-92	25'W/10'N-SE Corner	-2.0'ffg	8.7	108.9	115.0	10.0	94.6	
2	5-11-92	50'W/10'N-SE Corner	-2.0'ffg	9.4	108.8	115.0	10.0	94.6	
3	5-11-92	50'W/50'N-SE Corner	-1.5'ffg	6.2	109.9	115.0	10.0	95.5	
4	5-11-92	20'W/60'N-SE Corner	-1.0'ffg	8.6	108.8	115.0	10.0	94.6	
5	5-11-92	10'W/10'N-SE Corner	-1.0'ffg	7.7	108.6	115.0	10.0	94.4	
6	5-11-92	38'W/38'N-SE Corner	-1.0'ffg	8.6	107.8	115.0	10.0	93.7	
7	5-11-92	10'S/10'W-NE Corner	-1.0'ffg	8.9	107.9	115.0	10.0	93.8	
8	5-12-92	55'W/65'N-SE Corner	-0.5'ffg	9.3	109.7	115.0	10.0	95.3	
9	5-12-92	15'W/70'N-SE Corner	-0.3'ffg	6.1	109.6	115.0	10.0	95.3	
10	5-12-92	15'W/35'N-SE Corner	-0.5'ffg	8.1	109.0	115.0	10.0	94.7	
11	5-12-92	40'W/30'N-SE Corner	-0.4'ffg	9.0	110.7	115.0	10.0	96.2	
12	5-13-92	45'W/45'N-SE Corner	SG	7.0	113.3	115.0	10.0	98.3	
13	5-13-92	37'W/35'N-SE Corner	SG	6.1	112.7	115.0	10.0	98.0	
14	5-13-92	20'W/20'N-SE Corner	SG	5.7	109.7	115.0	10.0	95.3	
15	5-13-92	10'S/10'W-NE Corner	SG	10.2	112.3	115.0	10.0	97.6	
Note: ffg = from finished grade SG = Subgrade									

Note:

This report presents the results of our testing of the fill placement. We have relied on the contractor to continue applying the recommended compactive effort and moisture to the fill during times when our observer is not observing operations. Tests are made of the fill only as believe necessary to calibrate our observer's judgment. Test data are not the sole basis for opinions on whether the fill meets specifications.

Project: E.C. Buehrer
Project No.: 893040.33

TABLE I
Maximum Density/Optimum Moisture
ASTM D-1557

Sample Number	Description	Optimum Moisture %	Maximum Dry Density, P.C.F.
1	Light Brown fine Sand	10.0	115.0

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

Lab Number : BD-0250-3
Project : 90-007 1061 Eastshore Hwy, Albany, CA

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample #17 West Side Wall	Soil	Mike Kitko	05/06/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	1800.	mg/Kg	EPA 9071	05/07/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
E08HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401

(805) 543-2553
FAX (805) 543-2685

Lab Number : BD-0250-4
Project : 90-007 1061 Eastshore Hwy, Albany, CA

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample #18 West Side Wall	Soil	Mike Kitko	05/06/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	650.	mg/Kg	EPA 9071	05/07/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
IE08HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

Lab Number : BD-0250-5
Project : 90-007 1061 Eastshore Hwy, Albany, CA

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample #19 North Side Wall	Soil	Mike Kitko	05/06/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	90	mg/Kg	EPA 9071	05/07/92	TW	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
IE08HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

Phone (916) 782 2110
FAX (916) 786-7830

AEGIS Environmental Consultants, Inc.

Sample Identification/Field Chain of Custody Record

Send results to:
Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

6002 50

Site Address: 1061 Eastshore Hwy
AEGIS Project #: 90-007
Shipped By: M. Kitko
Shipped To: Coast to Coast Analytical Services
Project Manager P. Graff

For Shell Projects Only
WIC:
AFE:
CT/DL:
Shell Engineer:
Hazardous Materials Suspected? yes (no)

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required
3 feet bgs	West Side Wall	Sample #15	May 06, 1992	Brass/soil	1	Total Oil & Grease
		#16				
		#17				
		#18				
	North side Wall	#19				

Sampler(s) (signature) Michael Kitko

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
	Michael Kitko		5/6/92	4:43	

Sealed for shipment by: (signature) Michael Kitko Date/Time: May 06, 1992 Shipment Method: Courier

Received for Lab by: (signature) Date/Time: Comments: Test for total oil & grease. 48-Hour turn-around.

Receiving Laboratory: Please return original form after signing for receipt of samples

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories
San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Visalia, CA

San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401
(805) 543-2553
FAX (805) 543-2685

MAY 19 1992

Ans'd PKG

CLIENT: Paul Graff
AEGIS Environmental Consultants, Inc
1050 Melody Ln. Ste.160
Roseville, CA 95678

Lab Number : BD-0252-1
Project : 90-007 1061 Eastshore Hwy, Albany, CA

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
Sample #20 North Side Wall	Soil	Mike Kitko	05/07/92	05/07/92

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Oil & Grease	50.	320.	mg/Kg	EPA 9071	05/08/92	CM	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
IE08HOS

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division (805) 543-2553
141 Suburban Road, San Luis Obispo, California 93401 FAX (805) 543-2685

QC Batch ID: IE08HOS

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
QC SPIKE	Solid			

CONSTITUENT	*PQL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Oil & Grease	50.	770.	810.	105.	mg/Kg	EPA 9071	05/08/92	CM	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
ED0252-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division
141 Suburban Road, San Luis Obispo, California 93401
(805) 543-2553
FAX (805) 543-2685

QC Batch ID: IE08HOS

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
QC SPIKE DUPLICATE	Solid			

CONSTITUENT	*PQL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Oil & Grease	50.	770.	860.	6.	mg/Kg	EPA 9071	05/08/92	CM	

Lab Certifications: CAELAP#1598, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

05/15/92

MH/oro/tmw
ED0252-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President